Design of Business Model Canvas For Investment Planning In Biotechnology: The Business Case For Halal Detection Kit Production

Arief Muhammad Sigit, Dominicus Savio Priyarsono, Siti Jahroh
Institut Pertanian Bogor, Indonesia
E-mail: arief.ms@outlook.com, priyarsono@apps.ipb.ac.id, sitijahro@apps.ipb.ac.id

*Correspondence: arief.ms@outlook.com

KEYWORDS	ABSTRACT
business model canvas, investment planning, halal products, real-time pcr, biotechnology industry, business innovation	This research aims to develop a new business model canvas to support PT XYZ's strategic plan in planning investment in the production of halal detection kits based on real-time PCR. The nine blocks of the business model canvas are used as a framework to evaluate the running business model, identify market opportunities, and design a business model that can optimize the potential of the halal market in Indonesia, which continues to grow. The results show that the optimization of elements, such as value proposition, key activities, key resources, customer relationships, cost structure, and revenue streams can support PT XYZ's transformation from distributor to manufacturer. The development of this new business model is expected to improve operational efficiency, maximize the potential of the local market, and create innovative and sustainable products. This research provides a strategic foundation for companies to take advantage of opportunities in the halal industry while increasing competitiveness through collaboration and adoption of modern technology in supporting value-based business development for the halal industry.

Introduction

In the food and beverage industry, halal products are a very important aspect for companies to maintain consumer trust and meet market demands. One of the issues that often occurs in the community is the existence of products that contain ingredients from pigs, both the main ingredients, and materials obtained from pig body parts derivatives. This of course reduces the level of trust in the product and conditions like this will make sales decrease and the business loses. So far, Real Time-PCR is known as one of the accurate methods in detecting pig DNA contamination in processed meat products (FATIMAH, 2013), such as falsifying meatballs using pork (Balia et al., 2014), calculating the amount of pig DNA and cow DNA content in gelatin mixtures (Cai et al., 2012) and identifying pig DNA in sausage products (Harisah, 2017).

The need for halal assurance in Indonesia is increasing, as reported by The State of

Arief Muhammad Sigit, Dominicus Savio Priyarsono, Siti Jahroh

Global Economic Report 2020/21 in the National Halal Science Research Directory (2021) recorded the amount of halal food consumption in Indonesia, a country with a population of 87% Muslims which reached 229.62 million people, which reached USD 144 billion (Wardana & Sitania, 2023). This makes Indonesia the largest consumer of halal products in the world, so the provision of halal products in Indonesia also greatly affects the lifestyle in the selection of products. Research by Izzudin and Adinugraha (2021) found that Indonesia has the potential to develop the Halal Industry in various sectors that have the potential to increase national economic growth. Azam & Abdullah (2020) conducted a limited study on secondary data and reviewed the literature relevant to the halal industry and concluded that Halal is becoming a focus for various companies around the world such as Nestle, Janan Halal Meat, Kingsley. Therefore, at this time many companies provide guarantees that the ingredients used to make a product come from ingredients that can be consumed by Muslims (Uusitalo & Antikainen, 2018).

The importance of business model innovation also affects companies engaged in the laboratory and health equipment distribution industry. According to (Jahroh, 2016) in his research, it is explained that in running a business, it should not be free from risks. The concept of business model innovation involves the creation of value and the revitalization of obsolete business models for the benefit of the organization, customers, and society (Osterwalder, 2010), so the Company must continue to strive to adjust its strategy in response to dynamic and unpredictable changes both in market conditions and in certain periods of time. A business model canvas is a widely used framework for the purpose of building a business model whether new or developmental, by presenting a methodology for explaining, illustrating, evaluating, and modifying a business model with a special emphasis on design and innovation. The methodology uses several components that are organized into four main pillars: customer interface (segments, relationships, and channels), product (value proposition), infrastructure management (activities, key resources, and partners), and financial considerations (revenue and costs) (Chua et al., 2019).

PT XYZ is engaged in the distribution of laboratory equipment and medical devices in the Indonesian market. Business development towards the production of accurate and effective halal detection tools will directly have a transformative impact on the company's business strategy (Zulkarnain et al., 2020). Companies will undergo a transformation from simply being involved in product distribution to taking on the role of a producer (Fakieh et al., 2022). To ensure the long-term success and profitability of this business development, the company needs to assess the potential profitability based on the development of a new business model that maps the potential of development costs, production costs, operational costs, and expected profit potential (Iheanachor et al., 2021). The investment planning model based on the business model canvas will help PT XYZ in allocating their resources to carry out product development and capture existing opportunities. Based on the description of the problem formulation, the researcher formulated a research question to answer how the new business model will be developed based on block analysis in the business model canvas for halal detection products?

Based on the description of the problem formulation and research questions, the goal to be achieved in this study is to analyze the current business model run by PT XYZ and develop a new business model based on nine business model canvas blocks.

The benefits that can be taken from this study are that the research is expected to be an additional source of reference for other research related to business model development using the business model canvas approach. In addition, this research is

expected to help and provide guidelines for PT. XYZ in developing a business model and assessing the feasibility of investing in halal detection kit products.

The study analyzes and designs nine basic blocks in the business model canvas to form a new business model canvas. The business model canvas allows for a clear visualization of the nine key elements in the business model, such as the value proposition, customer segments, and cost structure that will help PT XYZ identify areas that need improvement and devise a more effective development strategy to meet the market needs of halal detection products.

Research Methods

The research was carried out for six months, in the period from October 2023 to March 2024. Data collection was carried out at PT XYZ located in Depok, West Java. This selection was made with the consideration that PT XYZ is a growing company and needs to develop a better business model for its business development strategy.

This study uses a method that combines qualitative and quantitative data collection in accurate and systematic data collection techniques (Saunders et al., 2019). The primary data in the first question was obtained from semi-structured interviews with respondents from the management of PT XYZ and also through the analysis of the company's financial statements. Secondary data obtained from literature reviews from various data sources such as books, journals, articles, documentation reports, internal company data, and internet media are used to support primary data.

Descriptive research methods are used to obtain an accurate and systematic description of information, explanations, and conditions related to the research object. The types and sources of primary data in this study were obtained through interview techniques by non-probability sampling of respondents who have experience or competence in a field, so that an informative picture and explanation were obtained. Respondents from within PT XYZ were selected deliberately (purposive sampling) with the consideration that the respondents concerned have expertise and are competent in their fields. Semi-structured interviews with respondents from within PT XYZ were conducted through face-to-face discussions, which were used as a way to analyze the company's current business model and develop a business model canvas.

Results and Discussions
New Business Model Based on the Development of the business model Canvas
Initial business model canvas

Osterwalder and Pigneur (2010) explained that there are five stages in the *ideation process* to design nine blocks on the business model canvas. The initial stage begins with the formation of a diverse team composition, then deepening that involves the team intensively, followed by exploring ideas, selecting ideas based on priority criteria, and finally making a prototype for the development of a new business model canvas. The composition of the team as respondents consists of individuals from various fields such as marketing, finance, product development, and operations. Diversity in the team allows for consideration from different perspectives, which will enrich the conversation and improve the quality of ideas. The diverse composition of the team also helps to create a broader and more realistic business model.

The phase 1 interview was held face-to-face with the director of PT XYZ which aimed to find out about the business model currently implemented, market potential, and competition for halal detection products. The researcher obtained information about the

overview of the business model that is being run by the company and the expectations for the business model to be run. In its development, halal detection kit products are planned to use *the real-time* PCR method. This method is a method in the field of biotechnology to detect the presence or absence of target DNA quickly and accurately. Food quality testing laboratories, such as GIS and Sucofindo, can play a significant role in the growth of halal detection kit products. Based on data collected from Opendata West Java, in 2020 there are around 10 thousand small, large and medium industries operating in the Depok area, and 25 thousand industries in the Bogor area. Meanwhile, databoks launched data from the Central Statistics Agency (BPS) which noted that currently DKI Jakarta has 1,628 large and medium-scale manufacturing companies spread across five city areas. The results of a random survey in the ecatalog also show the limitations of local products for the detection of pork with *real-time* PCR, the rest of the products available in both the ecatalog and the marketplace are still dominated by imported products. Based on interviews and discussions, the context of PT XYZ in the development and application of halal detection kits based *on realtime* PCR is expected to provide significant benefits in ensuring the halalness of products in an efficient, reliable, and cost-effective way. The potential consumers for this detection kit are seen from the market needs of all MSME business actors and the food and beverage industry.

The company's main business model is communicated as a values-driven business to build and support innovation in the fields of science and biotechnology. The overall value built by the company focuses on solutions to problems in the world of laboratory and science, so that the sales and marketing personnel of the company are prepared to discuss and provide the right products and become customer solutions. The company sells products that are registered, quality and quality guaranteed, and provides consulting services with potential customers to meet the needs of supporting activities in the laboratory. Technical support and repairs are also provided as part of efforts to reduce the risk of customer losses.

The segmentation of customers that have been served by PT XYZ is classified based on the special needs of chemical/reagent products, medical devices and laboratory equipment. PT XYZ divides customer segmentation based on academic customer segments, customer segments from government institutions, customer segments from private and industrial companies, customer segments from hospitals and clinics and reseller segments. The company provides customers with the opportunity to add certain insights and skills by participating in seminars or trainings held by foreign manufacturers. In addition, the company has 2 support teams in pre-sales services (product presentation, demo unit) and after-sales (product use training), namely *the Field Application Support* (FAS) team and *the Field Service Engineer* (FSE) team. The FAS team plays a role in providing assistance, consultation, and also training in the use of tools and materials. The FSE team plays a role in providing technical support for installation, periodic maintenance, and repairs in the event of damage to laboratory equipment.

Design of Business Model Canvas For Investment Planning In Biotechnology: The Business Case For Halal Detection Kit Production

Main Partners	Key Activities	Value Proposition	Customer Relations	Customer Segmentation
• Financial institutions • Importer company • Global distributor • Manufacturers of materials and tools • Expedition companies • Reseller	• Importation of laboratory materials and equipment • Distribution of laboratory materials and equipment • Product Demo • Product registration	• Providing products that support the development of biotechnology in Indonesia • To be a solution provider in terms of laboratory related	• *Email, Whatsapp* • After-sales Service & Technical Support: FAS and FSE • CS special services	Segmentation in biotechnology • Academics in the field of science and biotechnology • Pharmaceutical, food, feed, agro industries • National research institutes (BRIN, Balai Besar) • Medical (clinical lab, PA lab, PK lab) • Reseller
	Key Resources		**Channels**	
	• Human resources (sales, marketing, ops) • Financial resources (capital for purchasing goods) • Intellectual resources (DA, LOA)		• Internal channels (Webinars/newsletters/seminars) • External channels (resellers, LKPP E-catalog)	

Fee Structure	Revenue Flow
• Variable costs (purchase of laboratory materials and equipment, shipping costs, import duty costs, marketing costs, sales commissions) • Fixed costs (operational, salary, transportation)	• Operational cooperation • Sales of laboratory materials and equipment • Parts sales • Installation and Training Services • Tool Repair Services

Figure 1 Canvas of PT XYZ's initial business model

There are two types of channels that PT XYZ uses to reach out and maintain good relationships with its potential customers. The Company's internal channels consist of sales and marketing personnel who reach out to and directly hold sales (e.g. LKPP) and serve customers with a potentially large number of transactions. External channels are

developed through partnerships with resellers in every area outside Jakarta, Bogor, Depok, Tangerang, Bekasi, and Bandung. The company has also taken advantage of digital developments by creating online sales channels to expand customer reach and market its products, especially from the *business-to-business segment*.

PT XYZ's value proposition is supported by several key partners of the company, both local and international. Manufacturers or manufacturers of laboratory materials and equipment become partners in the supply of goods for distribution. Logistics and expedition companies play an important role in managing the process of importing goods. To obtain import and distribution permits, companies also need to coordinate with government agencies. Reseller becomes PT XYZ's partner in product renewal with customers. Online sales platform services such as Tokopedia are also partners that help sell the Company's products.

PT XYZ's main activity was initially to sell goods and or services with a consultative model to five customer segments, each of which has different material and tool needs. PT XYZ also distributes goods from producers to consumers, both directly through the Company's internal channels, and indirectly through partner channels and online sales. The company is also actively developing a network among manufacturers of medical materials and devices or laboratories, thus enabling the company to obtain products with guaranteed quality and quality to meet the needs of the market in Indonesia.

In an effort to support the Company's key activities, there are at least three main resources owned by the Company. Reliable and skilled human resources (HR) with special qualifications in the field of science. It is these human resources who can effectively communicate with potential clients from biotechnology backgrounds and market products in the domestic market, as well as develop networks with international manufacturers. As an authorized distributor, the company is required to complete the payment for the ordered goods before the manufacturing partner ships the goods to PT XYZ, so financial resources are required in terms of investment capital and working capital. Government Regulations expressly regulate the exclusive right, which allows only one Company to handle the international distribution of goods once it has been registered in the system. Therefore, intellectual resources in the form of exclusive distribution rights of the brand increase the company's capacity to offer products to potential customers.

The cost of procurement of goods is the largest variable cost incurred by PT XYZ. In this case. The company does not compete with other companies that provide cheaper products, and therefore the company still offers products that are official, registered, and well-informed. The amount of variable cost value for the procurement of goods can vary according to the amount and value of the procurement of goods, as well as the bills that must be paid in that month. Marketing and transportation costs to support salespeople are required to visit customers becoming the second largest component after procurement of goods. The cost component for employee salaries is the largest component that makes up PT XYZ's fixed costs because human resources are included in the Company's main resources.

Based on the value proposition that is influenced by customer relationships and channels on customer segmentation, the company's revenue streams mostly come from the sales of medical and laboratory materials and device products. The customer segment from industry became the segment with the largest sales value over the last 3 years, followed by the segment from the government and hospitals. Another revenue stream comes from the sale of customizable laboratory testing services and is a collaboration

with third parties. From this testing service, the Company can also get income from the sale of reagents, both to customers and to institutions that conduct laboratory testing. In addition, the revenue stream is also obtained from equipment repair services along with the availability of spare parts from the tool, which although the value is not too large, but with consistency in providing maintenance, the value obtained is quite significant for the company.

Idea exploration, prioritization and development of a proposal model for a new business model canvas

Furthermore, in the stage 2 interview, the researcher discussed with the operational, finance, and sales departments aiming to analyze the current business model canvas. The researcher discussed the innovation of the business model canvas that will be proposed as a prototype in connection with the Company's plan to develop new products in the field of halal detection. The main focus at this stage is to increase the number of ideas that can be generated and not focus on the quality of the ideas, as detailed in Table 1. Supporting documents to explain the necessary information, such as company strategy, company profile documents, company annual report documents, as well as literature studies relevant to the business model. The use of this instrument allows researchers to obtain valuable and relevant information from respondents who have the necessary expertise and experience in testing business development strategies and analyzing the feasibility of investing in halal detection products at PT XYZ.

Table 1 Idea exploration and prioritization stage

Block	Idea Exploration Stage	Prioritization Stage
Customer Segmentation	B2B and niche markets	B2B and niche markets
	Halal Testing Laboratory	28 Halal inspection agencies (LPPOM MUI, SIG, Sucofindo, BPJPH lab, etc.)
	Food and Beverage Industry	Food, Beverage, Pharmaceutical, and Cosmetic Producer Industry (MSMEs)
Value Proposition	Independence of detection tools in Indonesia	Independence of detection tools in Indonesia
	Ability to utilize technology	Ability to utilize technology and create new product properties
	Assisting customers in terms of accuracy	Pride in domestic products
	Reduced operational costs	Ease of use of the product improves performance in the laboratory
	Pride in domestic products	Operational cost efficiency due to improved results accuracy
	Improve performance in the laboratory	
	Ease of use of the product	
Channels	Internal channels (sales and marketing, online platforms advilab.id)	Internal channels (sales and marketing)
	External channels (*resellers*, LKPP E-catalogs, online marketplace platforms)	Partner channels (*resellers*, LKPP E-catalogs, halal inspection labs)

Block	Idea Exploration Stage	Prioritization Stage
		Digitization of sales channels (online platforms advilab.id))
Customer Relations	Consulting and training	Consulting and training services
	Pre and after-sales service	Proactive service for pre and after-sales
	Cooperation with private associations and governments	Cooperation with the community
	Service automation	Customer loyalty
	Government bureaucracy	Digital marketing
	Webinars/marketing info/newsletters	
Revenue Flow	Detection kit sales	Detection kit sales

Table 4.1 Idea exploration and prioritization stage (*continued*)

Block	Idea Exploration Stage	Prioritization Stage
	Operational cooperation (KSO)	Subscription system
	Tool sales	Sales of detection tools
	Installation cost	Consulting and training services
	Service fee	Formula license
Key Resources	Physical resources (laboratory, equipment, raw material supply)	Physical resources (laboratory, equipment, raw materials)
	Human resources (production labor)	Human resources
	Financial resources (financial institutions)	Financial resources
		Intellectual resources
Key Activities	Production	Research and Development
	Distribution	Production
	Patents and trademarks	Patents and trademarks
Main Partners	Financial institutions	VWX Institution
	Importer company	Raw material suppliers
	VWX Institution	Sub distributor
	Sub distributor	Delivery service companies
	Raw material manufacturers	Financial institutions
	Expedition companies	Partner laboratories
Fee Structure	Cost of purchasing raw materials	Cost of purchasing raw materials
	Raw material transportation costs	Raw material transportation costs
	Entry tax fee	Raw material input tax fee
	Operational costs	VAT Fees
		Operational costs
		License fees and royalties

Proposed business model canvas

After analyzing and evaluating the existing business model canvas, the researcher developed and finalized the new business model canvas as a proposal for the development of halal detection products. The new business model canvas is implemented based on ideas generated from a variety of respondents who are fully involved in the company's activities. The development of nine basic blocks in the business model canvas is shown in Figure 2, as a result of expanding the scope of ideas, selecting criteria based on priority, and drafting a new business model canvas development framework. Furthermore, from the existing data, data processing is carried out to identify business blocks that will be

applied in the canvas of the new business model. Here's a breakdown of each of the business model canvas blocks that the company is currently implementing and developing.

The development of new products can help companies in creating new value, namely becoming a solution for domestic products related to laboratories and science as a form of effort to build the independence of laboratory equipment in Indonesia. This new value proposition is expected to give a positive value to pride in national products that provide ease of use of products and help reduce operational costs. Halal detection product innovation with *real-time* PCR technology can provide accurate data and access for customers who previously had difficulty in determining the halal properties of the ingredients used.

Main Partners	Key Activities	Value Proposition	Customer Relations	Customer Segmentation
• **Financial institutions** • **Importer company** • **Global distributor** • ~~**Manufacturers of materials and tools**~~ • **Expedition companies** • ~~**Reseller**~~ • *VWX Institution* • *Raw material manufacturers and suppliers* • *Validation partner laboratories* • *Sub distributor*	• **Importation of laboratory materials and equipment** • **Distribution of laboratory materials and equipment** • **Product Demo** • ~~**Product registration**~~ • *Continuous R&D* • *Production and testing of detection kits* • *Registration, and certification of*	• ~~**Providing products that support the development of biotechnology in Indonesia**~~ • ~~**To be a solution provider in terms of laboratory related**~~ • *Build independence with biotechnology-based innovation by leveraging the latest development technologies in biotechnology for reliable detection.* • *Increased operational cost efficiency due to improved yield accuracy (LOD 1 copy DNA)* • *Creating pride in the reliability and ease of use of domestic products (and no cross-reactions)*	• *Email, Whatsapp* • **After-sales Service & Technical Support: FAS and FSE** • ~~**CS Services**~~ • *Cooperation with the community for training and education* • *Customer loyalty program* • *Providing*	**Segmentation in biotechnology** • **Academics in the field of science and biotechnology** • **Pharmaceutical, food, feed, agro industries** • **National research institutes (BRIN, Balai Besar)** • **Medical (clinical lab, PA lab, PK lab)** *B2B and niche markets* • *28 Halal inspection agencies (LPPOM MUI, SIG, Sucofindo, BPJPH lab, etc.)* • *Food, Beverage, Pharmaceutical, and Cosmetic Producer Industry (MSMEs)* • *Halal Supervisory and Certification*

Key Resources

• **Human resources (sales, marketing, ops,** *laboratory staff*)
• **Financial resources (purchase capital, investment** *capital*)
• **Intellectual resources (DA, LOA,** *patents, brand rights, NIE, formulas, real-time PCR technology*)

Channels

• **Internal channels (Webinars/news letters/seminars)**
• ~~**External channels (resellers, LKPP E-catalog)**~~

• *Partnership (28 halal inspection laboratories, resellers)*
• *Digitization of sales channels (ecommerce,*

Fee Structure

• **Variable costs (purchase of laboratory materials and equipment, shipping costs, import duty costs, marketing costs, sales commissions,** *purchase of production raw materials, purchase of production equipment*)
• **Fixed costs (operational, salary, transportation)**

• *Overhead costs (laboratory, royalties, brand patents, distribution permit registration, waste treatment*

Revenue Flow

• ~~**Operational cooperation**~~
• **Sales of laboratory materials and equipment**
• **Tool Repair Services and Spare Parts Sales**
• **Installation and Training Services**

• *Sale of halal detection kits*
• *Production contract system*
• *Licensing contract for formula kits*
• *Halal workshop*

Description: (a) **Bold Letters** : Initial business model; (b) *Italic letters* : business models develop

Figure 2 Proposed business model canvas

Halal detection products developed specifically target customer segments that need kits for halal certification and ensure that their products are free from non-halal ingredients, such as food and beverage companies, halal certification bodies, food and beverage quality testing institutions, restaurants and companies that are concerned about this issue. Cooperation with relevant associations is an addition in maintaining

relationships and retaining customers. The marketing program is proposed through MSME associations and also community organizations that have similar concerns for halal and safe products to reach a wider market. Customer loyalty programs need to be formed as a way to get feedback loops on products developed by companies.

Based on the results of interviews and discussions, the distribution channels and main partners are not too receptive to changing ideas. However, to optimize efforts in reaching customers, digitizing distribution channels through *local e-commerce* or eCatalog will certainly provide benefits for the Company. Another potential is cooperation in the form of cooperation contracts that meet national standards, and partnering with halal inspection laboratories from the private sector or the government.

Companies need partners to collaborate on product research and development. Setno, 2024, added that producer partners from abroad are needed who act as raw material suppliers. The Directorate General of Intellectual Property is one of the government agencies that plays a role in patent registration, both trademarks and formulas of detection kit products. This registered patent then has the potential to be offered as a license to other prospective domestic producers. Furthermore, the Company wishes to collaborate with domestic subdistributors who play a role in distributing this halal detection product.

At the development stage of key activities, the addition of continuous research and development activities is part of the need for the development of halal detection kit products, together with partners who are researchers for these products. PT XYZ is responsible for pre-production activities, starting from procurement and processing of raw materials to becoming detection equipment products in the form of finished and post-production products in terms of marketing, registration, patents, brand certification and product legality.

Financial resources for product development come from the company's cash, and the company will also consider borrowing capital funds from financial institutions to meet the cost of investment needs for the development and production of halal detection kits. Financial resources play a role in ensuring the availability of scheduled raw materials. In addition, the development of the company's business from distributor to manufacturer requires the company to recruit new workers in the operational department who have special abilities and knowledge in developing biotechnology products. The changes to this block also include intellectual resources for the commercialization of patents and licenses from partners who are working closely with PT XYZ on the development of these products.

The company supports key activities and key resources by developing a cost structure in product development. The largest cost comes from variable costs for the procurement of raw materials, such as catalytic enzymes. Most of the raw materials of products are still dependent on imported products, so fluctuations in foreign exchange values and the adequacy of the supply of raw materials will greatly affect the cost of bringing in these raw materials. The selection of raw materials is a priority to support the sustainability of product development and prioritize product quality. PT XYZ hopes that the production cost of this raw material component can be more economical by collaborating together with parties who are able to produce domestic raw materials to add value from the domestic component level (TKDN). The cost structure block also gets a lot of additions, such as license fees, royalty fees, and VAT fees.

Based on the value proposition developed, there are at least four ways to get revenue streams from halal detection products. First, through the mechanism of selling halal detection kits, both directly and with a production contract system. The production

contract system will benefit both parties, as it ensures the continuity of production every month and also the availability of stock quantities. Second, through the halal workshop training mechanism. Companies can add new revenue streams for companies because there are costs that can be obtained from workshops/training. Third, through the licensing mechanism or the sale of patents. With the licensing mechanism, the Company will obtain revenue sustainability, which will be measured by the number of kits produced. The revenue stream at this stage undergoes several changes and adjustments so that the overall idea can be managed by the company.

PT XYZ can use the new business model canvas as a guideline to transform its business from distributor to producer, especially in strengthening its business competitiveness in the halal detection market. Strengthening the value proposition is one of the strategic steps that can be pursued by PT XYZ with an emphasis on local products that are innovative, accurate, and support the independence of domestic laboratory equipment. Diversify revenue streams obtained from formula license development, halal training, and production contracts to ensure revenue sustainability and financial stability of the company.

Collaboration with local strategic partners is important to improve operational efficiency. In this way, PT XYZ can reduce dependence on imported raw materials and maximize the level of domestic components which is the main requirement for product distribution. Market reach can be expanded through the digitization of the sales process by utilizing the e-commerce platform and LKPP e-Catalog. This step needs to be balanced with the development of skilled human resources and the use of technology to support research and product development in a sustainable manner. Therefore, training and recruitment of experts in the field of biotechnology must be a priority to support product innovation and business sustainability

Conclusion

Traditional business models often ignore the unique considerations of the halal market, such as specific customer segments, certification requirements, and ethical considerations. Therefore, a comprehensive understanding of the current business model and the one that will be developed is needed. The business model canvas allows PT XYZ to visualize changes or uncertainties in any one element (e.g., regulatory changes related to halal products) that may affect the overall business model. Based on the results of the evaluation of the halal detection kit production development plan, PT XYZ needs optimization in 6 blocks. Each optimized block shows the elements in the business that work synergistically and provide the foundation for future business development, namely the value proposition, customer relationships, key activities, key resources, revenue streams and cost structures. The block of customer segments, channels and main partners has not changed too much because there are not too many significant differences with the company's position as a distribution company.

References

Azam, M. S. E., & Abdullah, M. A. (2020). Global halal industry: realities and opportunities. *IJIBE (International Journal of Islamic Business Ethics)*, *5*(1), 47–59.

Balia, R. L., Suryaningsih, L., & Putranto, W. S. (2014). Pengujian pemalsuan bakso dengan daging babi melalui pendekatan ensimatis dan molekuler pada UKM di kawasan pendidikan Jatinangor Kabupaten Sumedang. *Dharmakarya: Jurnal Aplikasi Ipteks untuk Masyarakat*, *3*(2), 70–72.

Cai, H., Gu, X., Scanlan, M. S., Ramatlapeng, D. H., & Lively, C. R. (2012). Real-time PCR assays for detection and quantitation of porcine and bovine DNA in gelatin mixtures and gelatin capsules. *Journal of Food Composition and Analysis*, *25*(1), 83–87.

Chua, E. L., Chiu, J. L., & Bool, N. C. (2019). Sharing economy: An analysis of Airbnb business model and the factors that influence consumer adoption. *Review of Integrative Business and Economics Research*, *8*, 19.

Fakieh, B., AL-Malaise AL-Ghamdi, A. S., & Ragab, M. (2022). The Effect of Utilizing Business Model Canvas on the Satisfaction of Operating Electronic Business. *Complexity*, *2022*(1), 1649160.

FATIMAH, S. (2013). *Deteksi Cemaran Daging Babi dalam Campuran Bakso Ayam Dengan Real Time Polymerase Chain Reaction dan Spektrofotometri Fourier Transform Infrared*. Universitas Gadjah Mada.

Harisah, S. U. (2017). *Analisis cemaran daging babi pada sosis sapi yang beredar di pasar parung menggunakan metode Real Time Polymerase Chain Reaction (PCR)*. UIN Syarif Hidayatullah Jakarta: Fakultas Kedokteran dan Ilmu Kesehatan, 2017.

Iheanachor, N., David-West, Y., & Umukoro, I. O. (2021). Business model innovation at the bottom of the pyramid–A case of mobile money agents. *Journal of Business Research*, *127*, 96–107.

Izzudin, M., & Adinugraha, H. H. (2021). Potential development of halal industry in indonesia. *LIKUID: Jurnal Ekonomi Industri Halal*, *2*(1), 1–16.

Jahroh, S. (2016). *Analisis faktor-faktor yang mempengaruhi risiko produksi jagung manis di Desa Sukajadi Kecamatan Tamansari, Kabupaten Bogor*. IPB (Institut Pertanian Bogor).

Osterwalder, A. (2010). *Business model generation: a handbook for visionaries, game changers, and challengers*. John Wiley & Sons.

Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students*. Pearson education.

Uusitalo, T., & Antikainen, M. (2018). The concept of value in circular economy business models. *Proceedings of the ISPIM Innovation Forum, Boston, MA, USA*, 25–28.

Wardana, M. H., & Sitania, F. D. (2023). Strategi Pengembangan Bisnis Melalui Pendekatan Business Model Canvas pada Kedai Kabur Bontang. *Jurnal Teknik Industri (JATRI)*, *1*(1), 10–17.

Zulkarnain, Z., Saputra, M. G., & Silvia, D. (2020). Strategi pengembangan bisnis melalui pendekatan business model canvas pada pt pitu kreatif berkah. *Journal Industrial Servicess*, *6*(1), 55–61.