

## FEASIBILITY STUDY OF CLOTHING MANUFACTURER OF UD SONY KONVEKSI

**Wyalapuspa Zakiy Kumaralitha\* and Mandra Lazuardi Kitri**

School of Business and Management, Institut Teknologi Bandung, Indonesia

\*Email: wyalapuspa@sbm-itb.ac.id

Clothing persisted as a large available purchase compared to other consumer goods (Statista, 2016). The clothing industry is dominated by the competitive high fashion and prosperous brands, as well as the fast fashion brands currently dealing with environmental issues. Another major market segment is mass produced lower-quality and standard products such as t-shirts, uniforms, white underwear, etc. Manufacturer of this segment mostly found in developing countries who employs mainly female workers—both semi-skilled and unskilled—and outsources to household production (Nordås, 2004). Clothing manufacturer is a manufacturing company that produces ready to wear clothes for specific segment(s) and use. The industry is categorized as a primary industry group, where the produced items would not require further processing or they can be utilized immediately. UD Sony Konveksi (SONY) is a home-industry clothing manufacturer specializes in providing school uniform in Pasar Klewer Solo. Hartiningsih, the owner of SONY, had decided to redefine the goal of the company because of its low performance in the past couple of years. Also, Hartiningsih is shifting the company into Sharia economy by avoiding usury and had paid all of the bank loan on September 2018, which adds up to the decision making criteria. The new goal of SONY is “to be the leading provider of school uniform of Central Java market,” which hopefully can lead the company back to its heyday. In order to achieve the dream, Hartiningsih is planning to restructure the business by transforming the unorganized production channel into a manufacturing line system with an effective supply chain management, adjusting with the new capital structure of equity capital only, conversing into a contract-based HRMS, and developing the market scope to B2B collaboration with schools for uniforms and alma mater jacket.

As a local player, UD Sony Konveksi (SONY) has remained consistent in maintaining the product quality since 1970. It started as a micro-business operating in its owner’s garage. Soeharno and Hartiningsih, the founders of SONY, committed that they would want to keep the brand image despite the business scale. The company kept on scaling up that now it is occupying a self-funded factory building. Known for its consistency and superior quality, SONY is one of the most prominent garment businesses in Kabupaten Klaten, especially in Wedi area where garment sector nests, even though it’s not the biggest one in terms of scale. It also owns two outlets, which one of them has to be idle due to the operation’s inability to generate sufficient amount of supply, and provides school uniform for both retail and wholesale buyers all around Surakarta Residency. Before Pasar Klewer Solo got caught in wildfire on Saturday night, December 27, 2014, SONY was providing other garments such as classic batik shirts and daily wear apparel. It used to sell products in several outlets, the first one was located in front of the factory building, the second one was in front of the owner’s house, and the other one was in Pasar Klewer Solo. The neat tailoring was complimented by admirable Jogja and Solo classic batik choices, as well as unique embroidery on the *koko* shirts. However, due to several considerations, the manager decided to switch to only provide school uniform because it was the most profitable product category offered and a more reasonable capital would be required to recover from the incident.

In 2015, Hartiningsih was left alone to run the business because her husband died. She was then helped by her son, Martanta, and her daughter, Apriliani. However, her son died in 2017. Hartiningsih stated than within the last couple of years the company experiences obstacles in financing, operating, and human resources management. As a home industry business, SONY still implements the traditional operating system where every each one of the labour needs to have the skill to produce a complete ready-to-wear

clothing. In other words, one labour needs to be fully skilled to fabric assembling, hemming, rivet and buttoning, also putting on the accessories. The cost of labour fee is scaling up the production cost and the labour would not be able to produce as many products (economy of scale). The operating system generates bigger operation and HRM problem, that is labour recruitment. The company relies labour recruitment on current labour's resources. For instance, the company was used to the labour regeneration system where the old, ineffective labour got replaced by their children or acquaintances. Following the development of garment business nowadays, the labour resources are more assured to work with manufacturing companies that provide fixed payroll each month, labour insurance, and labour uniform, instead of traditional home-industry. It is difficult and getting more difficult to find new labour for SONY with the skills requirement and current HRM system. This obstacle only worsen their supply shortage. SONY have not invested resources in marketing aspects and the owner stated that marketing is currently not required yet for the business, since the company has not been able to fulfil the current market demand.

In September 2018, Hartiningsih have decided to shift into Sharia economy by avoiding usury. The company has paid off the bank loans at the amount of IDR 1,150,000,000.00 all at once by that month and leaving it with the unstable financial condition. At the same time, after 49-years of operating in an ineffective business system, Hartiningsih decided to redefine the company's goals and restructure the business. She is planning to shift the business from home-industry to modern clothing manufacturer in order to follow up with the industry development. The plan includes: (1) Transforming the unorganized production channel into a manufacturing line system with effective supply chain management, (2) Adjusting with the new capital structure of equity capital only, (3) HRM conversion into a contract-based human resource management system (HRMS) from recruitment, evaluation, skill set, until training, as well as (4) Develop the market scope to B2B collaboration with private schools for uniforms and universities for alma mater jacket. Therefore, to transform into manufacturing line system, SONY would have to generate an effective design in the first place for the entire production area. On the master plan for the new system, the production area will take place in the existing factory building. The raw material and inventory storages will not be relocated nor reorganized because they already have the properly attached installation of racks and organizers. The remaining machines, consist of sewing machines, a riveting machine, hemming machines, as well as the tables and boxes will be sold before the remodelling start. Based on the interview result with Hartiningsih, most of the existing machines have not been used for more than three years because, in 2015, some workers proposed to execute the production at home in which they will give the finished goods back to the factory building in predetermined schedule. Besides the fact that this system made monitoring and controlling a big challenge, the sewing machines owned by SONY became idle and depreciated faster. It would require a lot of cash to repair it like new, thus, Hartiningsih stated that replacing them with new ones would cost less.

The machines will be replaced by two sets of transition stations where raw materials are prepared for cutting and sewing, two sets of cutting stations with manufacture-based 8 inches straight knife fabric cutter on each station, six sewing lines that involve four JUKI DDL-8100E One Needle industrial sewing machines for assembly and Bernette B48 Funlock hemming machine on each line, three customized tables of quality control stations, two stations of JUKI LBH-781 riveting machines and two stations of Simaru SM1377 high speed button attaching machines, four sets of 30 litres steam ironing stations, and finally two stations for packing process. The new masterplan will also be equipped with customized connecting tables and chairs for more ergonomic working stations, and three back-up JUKI DDL-8100E One Needle industrial sewing machines. A second-hand van will be purchased at IDR 115,100,000.00 for distribution process of both raw materials and inventories. Four sets of Acer PC Core i3 along with office tables and chairs will be invested in for the administration purposes in the office.

The revamping of the production system will cost IDR 258,630,000.00 in total and the office will cost IDR 14,440,000.00. Concerning the current condition of the factory building, a building improvement at the amount of IDR 140,000,000.00 for foil layering on the ceiling will be invested as well. For the human resources aspects, a general manager will be hired to be in charge of the whole factory building and obligated to make weekly report to the owner. He/she will be paid at IDR 3,000,000.00 per month regarding their workload. A financing admin, an operating admin, a marketing admin, and a human resource manager concurrently work as a supervisor will be hired for the job descriptions and paid at IDR 2,000,000.00 monthly. Three sales persons paid at IDR 2,000,000.00 a month will be assigned at the outlet in Pasar Klewer Solo coworking together. A security for the factory building and a van driver will be assigned for the job and paid at IDR 1,900,000.00 per month. A raw material storage manager, inventory storage manager, and three workers for backup team will be paid at IDR 1,800,000.00 monthly or slightly above the regional minimum wage. Meanwhile, the rest of the labour assigned in the manufacture line system will be paid at IDR 1,800,000.00 monthly as well.

These very thorough business alteration, along with the new redefined business goals to acquire the school uniform supply of Central Java region, restricts SONY to have an optimal and effective financial strategy because they would have to adjust most of its business components, both administration as well as production. Hartiningsih, as an owner as well as the co-founder and general manager of the business, is very well convinced to execute the business remodelling after losing almost 50% of its potential market each year. This was recognized from the direct observation of the sales and situation at Pasar Klewer Solo after all the inventories were sold. A lot of buyers, both retail and wholesale, were still going in and out of the market and asked the sales person in her outlet if they still have any stocks remaining. Some wholesale buyers even take the leftover stock even if it's not what they were looking for. In addition, the company never had any accountable business reports that cover all aspects from finance to operations as the effect of the unorganized management. This condition forces the company to strive in speculations and has made them unable to keep up with the industry's growth. Observing the growth of Central Java population, as well as Indonesia's population growth projection, the market loss will increase if SONY does not take any solving action. The demand will find other dependable supply, either another product supplier or another marketplace. The progressive net enrolment rate of education in Central Java also shows existing potential of the market, meanwhile, the number of players in this competitive industry is not too many. Therefore, further developing the business in the current industry is hopefully profitable in the long run.

UD Sony Konveksi (SONY), as one of the many firms that pursue the business in the clothing industry, has the goal to maximize the owner's wealth, which aligns with the financial management's primary goal. Thus, the manager of SONY should only execute projects that are expected to increase and maximize the owner's wealth. As what Gitman (2015) have stated, the key variables that managers should consider when making business decisions are the return and the risk. A financial feasibility study is an analytical tool for evaluating the operating performance and financial condition of the investment and forecasting for the future. It depends on the expected return and expected risk (Fabozzi, 2003). The financial feasibility study can be analysed by several business analysis tools, one of them is capital budgeting which the function is to analyse changes that will have continual effects in the long run (Christensen, 2000). In order to pursue the research objectives and stick to the company's goal to maximize the owner's wealth, this research will use the capital budgeting technique in order to analyse the feasibility of the agreed plan. Capital budgeting is the process of evaluating and selecting long-term investments that are consistent with the firm's goal of maximizing owner's wealth (Gitman, 2015).

There are several techniques to calculate if the investments are profitable for the company, which are the Discounted Cash Flow (DCF) techniques such as Net Present Value (NPV) method, Initial Rate of Return (IRR) method, Profitability Index (PI) method, as well as Non-Discounted Cash flow techniques such as Payback Period and Accounting Rate of Return. However, Leon et al. (2008) discovered that NPV, IRR, and Payback Period methods are considered as the most popular ones used in Indonesia. Therefore, this research will apply those methods because NPV and IRR take account the time value of money and discount the future cash flows, as well as Payback Period because the owner requested for it to see if the payback period meets her criteria. Discounted Cash Flow technique consists of three different stages. In the first stage, scenarios are developed to predict future cash flow (CF) for the next five to ten years. Financial managers should determine the relevant cash flows associated with the project, which is the incremental cash flows. The incremental cash flows represent the additional cash flow expected to result from a proposed capital expenditure. Which then, an appropriate discount rate calculated by Cost of Equity and/or Cost of Debt has to be determined to discount all future CFs to find the Net Present Value. To define the cost of capital, this research will use the Cost of Equity (COE) because the long-term capital of the company is fully sourced from equity capital only. The COE in this research is calculated with the help of the capital asset pricing model (CAPM) because it shows the relationship between the rate of return and the risk through beta, instead of constant growth. The next step is to identify the Terminal Value, which is the cash flow resulting from termination or liquidation of a project at the end of its economic life (Gitman, 2015). The present value of the cash flows are summed up with the TV (Steiger, 2008) to calculate the PP, NPV, PI, and IRR.

Payback period considers the time it takes the firm to recover its initial investment in a project as the measurement. If the payback period is less than the maximum acceptable payback period determined by the management, the firm could accept the project. By measuring how quickly the firm recovers its initial investment, the payback period also give implicit consideration to the timing of cash flows and therefore to the time value of money since it can be viewed as a measure of risk exposure. Nevertheless, most companies are evaluating investment projects with the net present value (NPV) method. NPV method is a more sophisticated capital budgeting technique because it takes account the time value of the money and it discounts the firm's cash flows at the firm's cost of capital. Projects with lower returns fail to meet investors' expectations and decreases the firm's value, the other way works if the project generates higher return. Manager should accept a project when the NPV is positive because it will return greater income than its cost of capital and increase the market value of the firm, meanwhile, they should reject the project when the NPV is negative (Gitman, 2015). Also, IRR is the discount rate that equates the NPV of an investment opportunity with zero because the present value of cash inflows equals the initial investment, or IRR is the value of  $r$  in the equation. Manager should accept the project proposed if the IRR is greater than the cost of capital, and reject the project if the IRR is lower than the cost of capital.

The new production system will take place in the existing building in Wedi, Kabupaten Klaten that have been quite idle in the recent years. In order to achieve a more comfortable and ergonomic production system, additional building improvement will be added to make the environment more enjoyable for the workers. The current building does not have good air circulation nor standard heat absorption because the roof is, in the most part, incorporate the material called asbestos. Since the current plant does not have foil-ceiling installation as heat absorber, this will be added in this investment plan. Even though it would not lengthen the asset life of the plant, it will support the quality maintenance as the production focus. In addition to the plant investment, SONY will also add equipment investment as well. The requirement fund of both the plant and equipment investments are at IDR 528 million (initial investment). Through the pro forma financial statement construction, the case with investment plan had more progressive and significant effect to the income statement as well as the balance sheet compared to the case without investment, at

an average growth rate of 30%. The COE is 7.54% with risk free rate at 7.53%, average beta at 0.4%, and market return at 10.19%. Based on the feasibility analysis, the PP of the project is 2.17 years which is lower than the owner's expectancy of 3 years, NPV at IDR 11,811,063,391.69 which is positive and acceptable, PI at 22.67 which is beyond 1.0, and IRR at 55% which is higher than the cost of capital.

Even though the plan has been assessed by capital budgeting techniques: PP, NPV, PI, and IRR, the risk of investment should also be considered. The Monte Carlo simulation analysis is used in this stage to project the risk, then evaluation to the simulation result can be done to determine if the investment's risk is comparable to the owner's risk tolerance. Before running the simulation process, we first need to determine the sensitive driver by using sensitivity analysis as the first process. The sensitive driver(s) will then be defined as the assumption variable(s) for 10,000 simulations ran by Monte Carlo simulation using the Crystal Ball software as a help. Therefore, the result of Monte Carlo simulation will be the probability distribution of the project's NPV to occur. The final sensitivity analysis shows that only the Inflation Rate that has significant effect to the net present value. This occurs because the company relies heavily on the COGS (COGS margin is between 55% to 64%) in which sensitive to inflation rate. Hence, the assumptions for 1,000 different trials of Monte Carlo simulation will involve the Inflation Rate, and the net present value defined as the forecast variable of the simulation. The analysis results in 100% accumulated probability of NPV higher than 0 with expected case NPV of 20,512,887,792.66 from the incremental cash flow of the two mutually exclusive projects. Thus, it is safe to say that the investment plan for UD Sony Konveksi has low risk.

Based on the data analysis results, it is safe to say that the replacement investment plan for SONY, that is to restructure the business of all aspects by purchasing new equipment and hiring labours with new HRMS, has the feasibility to be executed because all of the criteria are met. Supported by the risk analysis result, the investment plan has low risk, which is favourable to the company. However, SONY is suggested to continually develop following the supply and demand condition by adding new machinery and plant investment by the seventh year after this investment because the daily production capacity would have reached the maximum level and the learning curve would slowly reach the constant level. Since the market do not stop growing and inflation has the probability to rise, SONY should anticipate the production capacity limit. In addition, paying more attention to the COGS and overhead costs needs to be done because those are the sensitive variable that majorly affect the NPV. To keep the company value positive and/or progressive, mitigating the risk by lowering the variable's expenses would show tremendous effect.

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