I. INTRODUCTION

1.1 A brief history

PT Sinar Sosro is the world's first company that develops ready-to-drink beverages in packed bottles. Initially, in 1940, the Sosrodjojo family began their company by making and distributing brewed tea under the brand name "Teh Cap Botol" in Slawi, Jawa Tengah. The initial product is in the form of dry tea and only distributed in Central Java. In 1953, the Sosrodjojo family expanded their company to Jakarta and developed a jasmine tea drink with the brand Teh Cap Botol, which was previously popular in Central Java. Promotional activities were carried out in Jakarta marketplaces utilizing a 'cicip rasa' (flavor testing) technique, with tasting carried out by cooking and boiling tea immediately at the market.

In 1960, Soegiharto Sosrodjojo and his relatives broadened and developed their business to Jakarta. Later, they relocated to Jakarta to expand their company and expose the product to the market by brewing tea in a larger pot while providing free samples to customers. They started promoting Teh Cap Botol in 1965 by undertaking product sampling on the market and then directly brewing the tea on the spot. This strategy, however, proved unsuccessful. They then devised a plan to deliver the product in a clean and sanitized glass bottle formerly used to store soy sauce. In 1969, they began selling ready-to-drink tea in glass bottles labeled Tehbotol Sosro.

On July 17, 1974, Soegiharto Sosrodjojo established PT Sinar Sosro at Jalan Raya Sultan Agung, KM 28, Kelurahan Medan Satria, Bekasi. Afterwards, on November 27, 2004, PT Sinar Sosro became an affiliate of the parent firm, PT Anggada Putra Rekso Mulia. PT Sinar Sosro now operates 12 factories in Indonesia, including Jakarta, Medan, Palembang, Tambun, Cibitung, Ungaran, Gresik, Mojokerto, and Gianyar. There are further factories manufacturing Prim-A mineral water at Sentul, Purbalingga,

and Pandaan. PT Sinar Sosro currently holds GMP and SSOP qualifications, as well as HACCP, ISO 9001:2015, Halal, and SNI certifications.



Figure 1. Logo of PT Sinar Sosro

1.2 Vision and mission

PT Sinar Sosro has a philosophy created by the Sosrodjojo family for establishing and running a business, namely 'Good Intentions'. The philosophy of good intensions is translated into "3K and RL" namely, peduli terhadap kualitas 'care about quality', peduli terhadap keamanan 'care about safety', peduli terhadap kesehatan produk 'care about product healthiness' dan Ramah lingkungan 'environmentally friendly'. The meaning of this philosophy is that the products marketed by PT Sinar Sosro prioritizes quality so that they do not provide products that are harmful to society and have an environmentally friendly production process. The philosophy of PT Sinar Sosro's products are without coloring agents, without preservatives, and without artificial sweeteners.

Vision from PT Sinar Sosro is "Becoming a world-class beverage company that can meet consumer needs, anytime, anywhere, while providing added value to all related parties."

The mission of PT Sinar Sosro is as follows:

1. Building the Sosro brand as a natural tea brand that has good and superior quality.

2. Producing new brands and products whether based on tea or not, and making it the leader of the Indonesian market.

3. Leading a national distribution network and building an international distribution network

4. Create and maintain commitment through long-term growth, both in sales volume and number of consumers.

5. Build human resources and produce leaders in accordance with the values of the company, namely goodwill, honesty, integrity, customer as a priority, and teamwork.

6. Give satisfaction to consumers and customers.

7. Contributing to the country's foreign exchange.

1.3 The main activity & products of the company

The company's primary activity is to manufacture and distribute RTD beverages, mostly tea-based products, to both the domestic and foreign markets. Aside from that, PT Sinar Sosoro is working on selling existing products, developing new products, maintaining and improving quality. PT Sinar Sosro is now producing a variety of products, including Tehbotol Sosro, Fruit Tea, TEBS, S-Tee, Country Choice, and Prim-A.

1.3.1 Non-Acidic Product

1.3.1.1 Tehbotol Sosro

As the most well-known and the first ready-to-drink bottle beverage in the world, "Tehbotol Sosro" is the featured product of PT Sinar Sosro. PT Sinar Sosro manufactures ready-to-drink tea in cardboard or glass containers. Sosro Bottle Tea was the first ready-to-drink tea in Indonesia and the

globe when it was introduced in 1969. It was first packaged in returnable glass bottle (RGB) packaging. The packaging of "Tehbotol Sosro" has been constantly improved.

Sosro bottled tea packaging includes 220 mL glass bottle tea (Returnable Glass Bottle), 200 mL, 250 mL, 330 mL, and 1 liter tetra pack packaging, PET plastic bottle packaging with aseptic filling sizes 450 mL and 350 mL, PET with hot filling sizes 350 mL and 500 mL, 230 mL pouch packaging, and 318 mL can packaging. Normal, reduced sugar, and plain varieties of Sosro Bottle Tea are available (Administrator, 2018).



Figure 2. Types and Variants of Tehbotol Sosro

1.3.1.2 S-tee

S-tee is a product developed by PT Sinar Sosro in cardboard or glass packaging. The difference between S-Tee and Sosro bottled tea is in the amount of net weight and price offered. Because many consumers are asking for tea products with more volume and more affordable prices. S-tee comes in a glass bottle packaging with a volume of 318 mL, a box packaging with a volume of 200 m3, and a PET plastic bottle packaging with a volume of 390 mL.



Figure 3. Types and Variants of S-Tee

1.3.1.3 Prim-A

Prim-A mineral water is packaged mineral water produced by PT Sinar Sosro in the 1990s. Initially, it was produced with the "Air Sosro" name and changed into *Air Mineral* "Prim-A" in 1999. Prim-A mineral water is available in various plastic packaged bottles with a volume of 330 mL, 600 mL, and 1,500 mL, cup packaging with a volume of 240 mL, and gallon packaging with a volume of 19 L.



Figure 4. Types and Variants of Prim-A

1.3.2 Acidic Products

1.3.2.1 Fruit Tea

PT Sinar Sosro developed Fruit Tea, a tea-based drink with fruit flavors, in 1997. Fruit Tea comes in a variety of flavors, including apple, guava, strawberry, blackcurrant, lemon, passion fruit, freeze (a strawberry and blackcurrant flavor combination), and x-treme (an apple and blackcurrant flavor combination). Fruit tea is available in a variety of packaging formats, including glass bottles or RGB (Returnable Glass Bottles) with a capacity of 235 mL, tetra pack with a capacity of 200 mL, can with a capacity of 318 mL, PET (Polyethylene Terephthalate) packaging with capacities of 350 mL and 500 mL, and pouch packaging with a capacity of 230 mL.



Figure 5. Types and Variants of Fruit Tea

1.3.2.2 Country Choice

In 2008, PT Sinar Sosro develops products in the juice category, namely "Country Choice". This product is available in several flavors, such as apple, guava, orange, mango and fresh fit series. This product is packaged in a tetrapak with a volume of 250 mL and 1 liter.



Figure 6. Types and Variants of Country Choice

1.3.2.3 Tebs

PT Sinar Sosro created a carbonated beverage product called "Tebs" in 2004. This product will be available in two flavors: mixed fruit and lemon-lime, and it will be available in 2022. The mixed fruit teas come in glass or RGB bottles with a capacity of 230 mL, PET bottles with a capacity of 500 mL, and cans with a capacity of 330 mL. Tebs lemon lime, on the other hand, is exclusively available in a 300 mL PET container.



Figure 7. Types and Variants of Tebs

1.4 Organizational structure

The detailed organizational structure of R&D Department could be summarized in Figure 8.

An R&D manager reports to the chief operating officer. The manager is assisted by three assistant managers, including a legal and regulatory assistant manager, a product development assistant manager, and a quality development assistant manager. Supervisors for each division report to these assistant managers.



Figure 8. R&D Organizational Structure at PT Sinar Sosro

Another flavor blending operator works under the supervision of the supervisors in the product development division. However, the quality development division is divided into three parts: quality control supervisors, quality assurance supervisors, and packaging development supervisors. The quality control supervisor is in charge of the countrywide examination of the company's product as well as the quality of the product generated by the formulation team. Furthermore, the quality assurance supervisors are in charge of maintaining PT Sinar Sosro's quality control. Meanwhile, the packaging development supervisor is concerned with the packaging of manufactured products. These three supervisors collaborate to guarantee that the quality of the items produced meets internal corporate requirements.

1.5 The student's unit or department

Research and Development (R&D) Section of PT Sinar Sosro is tasked with conducting research, product development and analysis of raw materials and finished materials. The analysis was carried

out on the physical, chemical and microbiological characteristics. The results of the analysis will be a consideration in making decisions on the materials to be used. In addition, the R&D section has an obligation to develop products properly by innovating old products and creating new products. R&D department at PT Sinar Sosro is led by The Research and Development department of PT Sinar Sosro is divided into 3 major divisions, which are Legal and Regulatory, Product Development, and Quality Development.

The legal and regulatory department is in charge of updating regulations related to governmentissued food distribution permits, managing product distribution permit documents and external documents, and handling legal issues that arise during the licensing process and operational implementation. The R&D Manager is responsible for reviewing and assessing products in order to maintain quality and fulfill company demands.

The product development division is responsible for keeping updated on trends in raw materials and technology, as well as creating and designing product formulas to meet the demands of the organization.

The part on quality development is separated into three sections: quality assurance, quality control, and packaging development. Quality assurance is responsible for managing product quality and safety, ensuring KPB implementation, and resolving customer complaints about quality concerns. Quality control is in charge of creating test procedures based on the demands of the firm and examining the factory's goods for compliance with the provisions. Packaging development is responsible for keeping up with packaging and product packaging technology trends, as well as packaging innovation and development.

The R&D division comprises four laboratories to assist in quality control and the development of PT Sinar Sosro's latest innovations:

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- Total Plate Count (TPC) testing is performed in a microbiology laboratory to analyze microbiological quality control and microbial contamination of goods. Mold and yeast contamination testing, as well as other tests, are available.
- 2. Physics-Chemical Laboratory for conducting quality control examination of physical and chemical quality in goods, including tannin content computation, acid and base level calculation, color testing, degrees of brix, pH, torque, turbidity, lid size, head space, and CO2 content.
- 3. Formulation laboratory which is useful for conducting research for product development or innovation in product improvement
- Sensory laboratory which is useful for conducting organoleptic or sensory testing of products being marketed or new products to be marketed