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## **Dedications**

I dedicate this thesis to my beloved parents, Marcial Silva and Mirella Mercado. They have been present in every important stage of my life, advising, supporting and providing me with everything I could have wished for. Without you, this thesis would not have been possible to achieve.

## **Abstract**

Amazona Chocolate is a company that sells high-quality organic chocolate and other cacao derivatives. The market where it operates value these characteristics and is willing to pay a premium for them. The profitability of this business has attracted companies increasing the competition, which raised the awareness of Amazona Chocolate to be more competitive. Although, the company has been and remains profitable, it is unknown how the distribution of its costs are, for which it is not known for sure how the money is actually being spent. Based on these premises, the consulting project aimed to research and propose a costing system that would identify the costs incurred by the firm on each stage of its operations, while also allowing to improve the decision-making of the firm.

Based on the literature review and the framework of Fisher and Krumwiede (2012), the consulting project proposed to elaborate a costing system composed by (a) variable and absorption costing (one complementing the other) for assigning costs to the products, (b) process costing for tracking direct product costs, (c) department cost pools to organize indirect product costs, and (d) transaction based drivers to allocate indirect costs, as it was identified through a weighted score assessment that this costing system was more suitable for Amazona Chocolate, based on its availability of resources, characteristics, and necessities.

The proposed implementation plan estimates a total period of execution of 12 weeks, which was divided into three main phases: learning, communicating, and executing. The scheduled period is flexible based on the availability and time of the stakeholders; however, it should not take more time than the estimated by the consulting team. Finally, the consulting report did not consider a cost of implementation since the evaluation of the costing system took into account the limited resources of the company, nonetheless, it is recommended to assign a person to execute the process of digitalization of the information held in physical files, for which it was estimated a period of 15 days and an investment of S/800.

## Resumen Ejecutivo

Amazona Chocolate es una empresa que vende chocolate orgánico de alta calidad y otros derivados del cacao. El mercado donde opera valora estas características y está dispuesto a pagar un mayor precio por este tipo de productos. La rentabilidad del negocio ha atraído a nuevas compañías, incrementando así la competencia; por lo que Amazona Chocolate desea ser más competitivo en su industria. A pesar que la empresa ha sido y sigue siendo rentable, se desconoce cuál es la distribución de sus costos, por lo que no se sabe con certeza cómo se gasta el dinero. Por estas razones, el proyecto de consultoría tuvo como objetivo investigar y proponer un sistema de costos que identificara los costos de la empresa en cada etapa de sus operaciones, al tiempo que permitía mejorar su toma de decisiones.

Basado en la revisión de la literatura y en el marco teórico de Fisher y Krumwiede (2012), el proyecto de consultoría propuso elaborar un sistema de costos compuesto por (a) variable y absorption costing (se complementan mutuamente) para asignar costos a los productos, (b) processing costing para rastrear costos directos de productos, (c) grupos de costos por departamento para organizar costos indirectos, y (d) drivers basados en transacciones para asignar costos indirectos. Esta elección se efectuó mediante una evaluación de puntaje ponderado, obteniendo que esta metodología era la más adecuada para Amazona Chocolate, en función de su disponibilidad de recursos y características.

El plan de implementación propuesto estima un período total de ejecución de 12 semanas, dividido en tres fases: aprendizaje, comunicación y ejecución. La programación es flexible; sin embargo, no debería tomar más tiempo del estimado por el equipo de consultoría. Finalmente, el informe de consultoría no consideró un costo de implementación ya que la evaluación del sistema de costos tomó en cuenta la restricción de recursos de la empresa, sin embargo, se recomienda que una persona se encargue del proceso de digitalización de la información que se maneja de forma física. Para lograrlo, se estimó un período de ejecución de 15 días y una inversión de S/800.

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## **Chapter I: General Situation of the Organization**

### **1.1. Presentation of the Organization**

#### **1.1.1. Company background**

Amazona Chocolate was created in 2013 with the aim to develop chocolate using cacao from diverse origins of Peru preserving a high-quality in its process, a business model that was new to the Peruvian chocolate industry by those years. Taking advantage of the trendiness of consumers for organic and healthy foods, as well as the consolidation of Peruvian national cuisine, the company has positioned itself as the first Peruvian company to develop organic bean-to-bar and tree-to-bar chocolates made 100% with Peruvian cacao from different cooperatives of farmers (Amazona Chocolate, 2019a). Having contributed to the economy of 250 grower families in the regions of San Martín and Piura, the organization seeks to rescue and revalue the Peruvian native cacao varieties through the empowerment and sustainable growth of the cacao growers in the value chain of its products (Amazona Chocolate, 2019b).

Throughout the last years, Amazona Chocolate has been at the forefront of innovation, reinventing its packaging to make it sustainable in coherence with the message that its products desire to transmit to its consumers (Amazona Chocolate, 2018). Also, its Research and Development Center is in the constant search for improvement and maintaining the high-quality characteristics of its products (Amazona Chocolate, 2019a). Moreover, Amazona Chocolate's concern to provide products of unique characteristics has led to obtaining different certifications for its different lines of products. The firm's products hold the NOP, USDA, and EU certifications, which guarantee that they comply with the corresponding organic production norms. The Slow Food certification is granted to the products that promote the diffusion of pleasure and knowledge by opposing to the standardization of taste in gastronomy, and safeguard regional gastronomic traditions through the products or farming

methods. The Ark of Taste is a seal that certifies that the product is part of an international catalog of foods that are part of the gastronomic heritage of a region, and that might be in danger of extinction. This seal was designed to conserve food at risk, through sustainable production. The Allergen-Free certification endorses that the products are free of the main allergens: cereals with gluten, peanuts, soybeans, milk and derivatives, nuts, sulfites, sulfur dioxide, to name a few. While the Gluten-Free certification indicates that products are free of gluten, which is a protein found in rye and wheat that is not very well received for people with celiac disease (intolerance to this protein, characterized by an immune-based inflammatory reaction that hinders the absorption of macro and micronutrients). Then, the FSC Recycled is granted to those organizations that have restricted the use and trade of illegally harvested timber and products made with it, additionally, it endorses that all the wood or paper used in the products come from reused materials. BPA Free molds, chocolate amazon products are made in Bisphenol-free molds since, various studies of the international scientific community ensure that Bisphenol A, can generate diseases and allergies. Additionally to these certifications, Amazona Chocolate's products have been awarded by the Academy of Chocolate UK and Great Taste because of the higher quality of its chocolates (Amazona Chocolate, 2018). These certifications along with the line of products that hold them, can be found in Figure 1.

The success of Amazona Chocolate has been achieved in recognition of the joint collaboration of the company and other institutions. For the supply of its raw materials, the organization owns a cacao production farm known as "Ecoperlacha" in the province of Lamas, San Martin region, where native crops are validated through DNA analysis to obtain unique and high-quality cacao beans. However, the company also works with exclusive cooperatives that supply cacao beans from other regions of Peru, whose products meet the international quality standards of organic and fair trade certifications. The Cooperativa











Products	Certifications										
	Organic (NOP, USDA)	Slow Food	Ark of Taste	Gluten Free	Allergen Free	Kosher Parve	FSC Recycled	Molds BPA Free	Academy of Chocolate UK	Great Taste London	
											
Blend line	55%	Organic cacao blend trinitarian and native	X					X	X		
	70%	Cacao blend trinitarian and native	X					X	X		
Origin line	72%	Native cacao - Ecoperlacha, Lamas, San Martín	X	X	X			X	X	X	
	73%	Trinitarian, ICS - Huinguyacu, San Martín	X	X				X	X	X	
	74%	Trinitary and native blend - Tocache, San Martín	X	X				X	X	X	
	78%	Morona cacao - Morropón, Piura	X	X	X			X	X	X	
	82%	Native cacao - Ecoperlacha, Lamas, San Martín	X	X	X			X	X		
Mini drops	55%	Organic cacao blend trinitarian and native	X			X	X	X	X		
	70%	Organic cacao blend trinitarian and native	X			X	X	X	X		
Derivatives		Cacao butter	X			X	X	X	X		
		Cacao powder	X			X	X	X	X		
		Type 1 Cacao powder	X			X	X	X	X		
		Type 2 Cacao powder	X					X			
		Cacao nibs	X					X			

Figure 1. Amazona Chocolate's products differentiation matrix.

Adapted from "Plan de Internacionalización de la Empresa Amazona Chocolate Modalidad I: Potenciamiento de Exportaciones," L. Quispe, 2018, Lima, Peru: *Programa de Apoyo a la Internacionalización*, p. 26.

Agraria Appropcap Ltda. is located in the District of San Juan de Bigote, Province of Morropon, Region of Piura and the Cooperativa Agraria Central de Cacao (Amazona Chocolate, 2019a; Amazona Chocolate, 2019c). For the production process of the chocolate, Amazona Chocolate works closely with companies like Selva Alta, Origin Partner, and Machu Picchu Foods, the latter also supplies important ingredients for the preparation of its products. These companies hold the certifications that endorse the quality of Amazona Chocolate's products. Among its packaging suppliers, Rollos de Papel S.A.C. is the local distributor of Detpak, an Australian company that manufactures certified compostable bags, while Impreso Grafica S.A.C. provides FSC certified stickers. Finally, Amazona Chocolate has also been working closely with governmental institutions such as the Comisión de



Promoción del Perú para la Exportación y el Turismo (PROMPERU - Commission for the Promotion of Peruvian Exports and Tourism), the Ministerio de Comercio Exterior y Turismo (MINCETUR - Ministry of Foreign Trade and Tourism), in order to export their products to international markets (Quispe, 2018).

### **1.1.2. Vision**

As it is stated in the internal documents provided by the firm (Amazona Chocolate, 2019a); the vision of Amazona Chocolate is: “to be recognized in the local, and soon, foreign markets for its differentiated products by satisfying customer’s demand and boosting its growth under a culture of social and environmental sustainability” (Amazona Chocolate SAC, 2019a). The statement has a central ideology and has exposed a clear business future, most components that are needed to create an effective vision have fallen throughout the sentence. However, there are still improvements that could be developed to enhance a better vision. According to D’Alessio (2013), there are 9 components that must be clearly stated and identified in a vision (see Table 1). These components are analyzed for the current vision of Amazona Chocolate. (a) The motivation for change in the central ideology of the firm is to have differentiated products that suit customer’s satisfaction and boost growth under social and environmental sustainability; (b) the proposed future of the business is to expand from local to international markets; (c) the vision contains many elements of information which seems wordy and complicated; (d) the goal is very determined and ambitious; (e) the mentioned time horizon is referred as “soon” but it does not say specific a time frame; (f) the geographic scope is local (Peru) and external (international markets); (g) the vision is readable and understandable to interpret by anybody; (h) the sense of urgency is not completely developed since the time frame is not clear; finally, (i) there is a clear picture of where the firm wants to go and develop (reach new markets in international countries to expand its operations).

Table 1

*Components of an Effective Vision*

Components	Included	Analysis
1 Have a central ideology that motivates to make changes	Yes	Product differentiation, sustainability culture
2 Design the organization for the future	Yes	To be recognized locally and internationally
3 Be simple, clear, and understandable	No	Very wordy
4 Be ambitious, conclusive, and realistic	Yes	Determined and know what to do
5 Define a time horizon	No	Soon, but not specific
6 Forecast a geographic scope	Yes	Local and abroad
7 Be familiar to everybody	Yes	Easy to understand
8 Create a sense of urgency	No	Time frame not clear
9 Draw a clear picture of where the organization wants to go and why	Yes	Wants to go internationally

Note. Adapted from *El Proceso Estratégico: un enfoque de gerencia*, by F. A. D' Alessio, 2013, México D.F., México: Pearson.

To have a more effective vision that would cover all essential components, a new proposed vision is written as the following: “By 2030, Amazona Chocolate wants to be recognized in the chocolate niche markets worldwide, as one of the forefront Peruvian producers in the organic industry of chocolate by providing safe, healthy, organic, fair and sustainable products for the most demanding consumers”.

This is a superior vision statement because (a) the central ideology is to become a recognized company in the global market by focusing in the quality and characteristics of its products; (b) the organization for the future is not only about serving high-quality products domestically but also in outer markets; (c) the sentence is simple and clear to transmit the message to readers;(d) it is ambitious to achieve the goal in 2030 because Amazona Chocolate is still a small exporter, however the time frame proposed is realistic for the characteristics of the organization; (e) 2019-2030 is the time horizon; (f) the geographic scope is both, the Peruvian local market and international markets; (g) it is familiar to everyone because the statement is clear and easy to understand; (h) it does create a sense of urgency since the time horizon has been revealed in the sentence; (i) to expand the market

from a national to an international level is the goal which helps the business to grow markets and be recognized by more people.

### **1.1.3. Mission**

The mission of Amazona Chocolate is to develop high-quality chocolates with organic standards, that are produced with native Peruvian cacao varieties, with the purpose of inserting them into specialized niche markets that value the differentiated characteristics of its products. Amazona Chocolate's organic process seeks to rescue native cacao varieties through its Research & Development Center, being also a key characteristic of its competitive advantage in the industry. In this way, it preserves the environmental sustainability of its partners, through the empowerment of cacao growers in the value chain of chocolate. The firm aims to build a close relationship with its clients, for which its strategy focuses on performing direct sales while educating its customers (Amazona Chocolate, 2019d). This mission will also be analyzed under the components for an effective mission indicated by D'Alessio (2013) which are: buyers, products, markets, technology, organization's objectives, philosophy, self-concept, and concern about public image and employees.

The evaluation of the nine components indicates that only five of them are included in the mission statement of the company, as it is displayed in Table 2. The analysis shows that (a) there is not mention of the target consumers and buyers; (b) the final selling product is high-quality chocolate; (c) the target markets are not well-defined; (d) the technology used by the company is linked to the biodiversity and research that is currently performed by the firm to produce different native cacao varieties; (e) the objective of the organization is to maintain and sustain its raw materials' biodiversity to drive business growth; (f) the philosophy of the organization is not clear; (g) the self-concept of the firm is the responsibility to sustain biodiversity and promote native cacao varieties; (h) they show concern about the environmental biodiversity; (i) it does not show concern about employees.

Table 2

*Components of an Effective Mission*

	Components	Included	Analysis
1	Clients / Consumers – Buyers	No	
2	Products: goods or services	Yes	Chocolate
3	Markets	No	
4	Technology	Yes	Biodiversity
5	Objectives of the organization: survival, growth, and profitability	Yes	Focus on growth through Promoting raw materials
6	Philosophy of the organization	No	
7	Self-concept of the organization	Yes	Sustain, promote native cacao varieties
8	Concern about the public image	Yes	pay attention to biodiversity
9	Concern about the employees	No	

*Note.* Adapted from *El Proceso Estratégico: un enfoque de gerencia*, by F. A. D' Alessio, 2013, México D.F., México: Pearson.

The new proposed mission statement is: “Provide high-quality, organic, fair-trade chocolate for healthy and demanding consumers in the local and foreign markets, while strengthening the local production of the different varieties of the Peruvian native cacaos by securing the sustainability of the value chain of the organization and taking responsibility for the sustainability of the environment”.

This new mission comprises more components than the previous, for which is far more effective. It (a) conveys that the target buyers are people concerned about their healthy lifestyle for which are also demanding regarding the quality of the products they consume; (b) selling high-quality organic chocolate to people; (c) the markets are both internal and external to Peru; (d) focus on the biodiversity of native cacao which requires advanced technology throughout the production process until final products come out; (e) the objective is providing specialized chocolate through cacao development in order to grow markets, especially international markets; (f) innovation, dedication, responsibility and sustainability all those values has revealed inside the sentence; (g) the spirit of exploration, innovation, environment friendly for developing high-quality organic chocolate; (h) protect biodiversity

is the responsibility and express the importance of environment, besides, organic product is better for consumers' health; (i) preserve the sustainability of the value chain, which includes the sustainable growth of their collaborators and partners.

#### **1.1.4. Values**

The values that guide the conducting pattern of the individuals involved in Amazona Chocolate, as well as the decision-making process of the organization, are the following (Quispe, 2018):

- **Integrity:** Honesty and transparency are core and solid principles for Amazona Chocolate. Commitment in every stage of work is essential, as well as constant communication.
- **Excellence:** Exceeding expectations and setting objectives that are challenging, above standards, is one of Amazona Chocolate's inner characteristics in order to improve and maintain its high levels of performance.
- **Teamwork:** Valuing key partnerships and collaborations has been one of Amazona Chocolate's reason to succeed. Sharing information and working together to achieve goals, while supporting and recognizing the contribution of each member, internal or external to the organization, will always be key to the company.
- **Innovation:** As a fundamental characteristic of the company, Amazona Chocolate strongly believes that its human talent can create solutions that lead to the improvement and transformation of the organization, market, and society.

#### **1.1.5. Code of ethics**

This report will make use of the concepts for control environment from the COSO framework report (Moeller, 2013), a management tool for auditing purposes, to propose recommendations for Amazona Chocolate to adhere to appropriate ethical standards, and also to build its code of ethics accordingly to the core values that the organization intends to

deliver to their customers. According to the COSO report (Moeller, 2013), internal control is defined as a process that is effected primarily by the board of directors from an entity, management and other personnel, which is dedicated to granting rational certainty concerning the attainment of objectives in categories such as:

- Effectiveness and efficiency of operations
- Performance, profitability and safeguarding of resources
- Trustworthiness and reliability of financial reporting - e.g. financial statements
- Acquiescence with applicable laws and regulations

One has to keep in mind that a process in the realm of internal control is a continuous series of actions, for which businesses are run through a necessary management process of planning, executing, controlling and monitoring (Moeller, 2013). Building-in controls into the entity's infrastructure affect the ability to accomplish its objectives and assist quality initiatives:

- Quality values are built and developed in the every-day of businesses
- Establishing quality goals
- Knowledge of competitive practices and client expectations encourages the enhancement of quality
- Helps to avoid unnecessary procedures and costs associated, if the controls would not have been built-in
- Triggers the development of new controls important for the activities of new businesses

One can identify different components of internal control, which are derived from the way management runs a business. Firstly, control environment, which includes ethical values and competence, meaning the environment in which people operate and the atmosphere in which people carry out their responsibilities. Secondly, risk assessment, which is the means

and awareness of how a company deals with the different risks that are present in its operations. For this, objectives have to be put in place, and the associated uncertainty has to be assessed. Thirdly, control activities ensure that the management directives have the necessary means to make the measures to be effectively carried out for the respective risk faced. Lastly, information and communication are put into place to obtain and transfer the knowledge and data required for the operation, management and control of its processes and procedures throughout the organization. Similarly, monitoring adjustments are made, if necessary, to induce change as conditions/environment change (Moeller, 2013). Any component within the framework can and will influence others (Figure 2). Thus, companies should not have internal control systems that are similar or identical, as they need to differ based on the characteristics of the industry and company, such as its size, culture and management philosophy (Moeller, 2013).



*Figure 2.* The updated COSO internal control framework.

Adapted from *Executive's Guide to COSO Internal Controls: Understanding and Implementing the New Framework* (p. 14), by R. R. Moeller, 2013, Hoboken, New Jersey: John Wiley & Sons.

Concerning the control environment, the COSO framework places integrity and ethical values at the core of control environment creation. In this sense, integrity is regarded to provide a prerequisite for ethical behavior; whereas, moral and behavioral standards to which Amazona Chocolate is committed to and wants to be associated with, need to be

reinforced in the product portfolios of the company, along with its operational structure. Allowing for the provision and establishment of ethical values, the code of ethics has to be ensured across different layers – enterprise, suppliers, customers, competitors, employees and public. Further, it has to be distinguished between culture and policies, where the first define what would happen in the organization, and the latter what management desires to happen. Also, the means to achieve effective internal control cannot overcome the ethical values and integrity of the people who are in charge of its creation, administration and monitoring, thus it contributes to the fact that the whole value chain and structure where the company is involved is in need to be aligned and to adhere its approach of applying ethics (Moeller, 2013).

Under these premises, this report acknowledges that the challenge for the company is high around the aim to satisfy the market demands of its customers and differentiating the products to individual clients' desires and needs. These are mostly dependent on complementary services requiring high-quality chocolate that is produced under the premises of certified standards (Amazona Chocolate, 2018). Additionally, it is evidenced that competition around complementary and auxiliary services will further intensify with the maturity of the market because products are fairly standardized, based on the general specifications and possibilities to satisfy the demand among the competitors. Failing to deliver the value proposition through its large-scale operational system might result in a loss of the customer unless the organization comprehends their demands, adjusts the new technologies in the market and presents new products and solutions. Therefore, it is strongly suggested to align the code of ethics to strive for excellence along the value chain, as far as the observation of the production facilities indicate discrepancies, facilities need to be monitored over time to aim for same production standards. Also, the use of different production facilities requires monitoring arrangements to ensure that criteria are met along



the value chain. This is especially true when evaluating the various certificates that the organization has to adhere to, which within the community of Amazona Chocolate is important as it is valued by their customers, providing the brand a concept of excellence in the eyes of the public. For this reason, it has to be ensured that all layers of the company meet the standards associated with the certificates. This is especially important as they allow the company to participate in value-enhancing activities only enabled for Great Taste Award holders. Then, the firm should place great care to meet the standards of these certifications as they provide a strategic competitive advantage against its competitors.

Based on the aforementioned, Amazona Chocolate must align its code of ethics with its vision and mission statement alongside the following points: (a) promote the economic and social prosperity of the members of the sector and interest groups under competition and commercial legality along the free market associations, while safeguarding assets and keeping, protecting, valuing and respecting the confidential information of third parties. (b) Guarantee the compliance of rules, regulations and laws, while assuring the safety of customers, members and suppliers of the industry, through the use of policies and procedures.; (c) respect the rights and duties of those involved in the sector, generating a climate of respect and tolerance; (d) repudiate all forms of bribery and corruption with any organization in the execution of its activities in the Peruvian cacao industry, showing a conduct of transparency and collaboration to sanction them; (e) reject any type of discrimination and intolerance, generating and supporting the acceptance of differences of thought, religion, sex, and traditions; (f) maintain the sustainability of Peruvian biodiversity, mainly in the places where the activities of the Peruvian cacao industry develops, and safeguard the regional agriculture traditions regarding production and methods of cultivation; (g) transparency communication of illegal and/or violating behaviors by assuming the responsibility and guaranteeing that the firm will act with integrity in all situations; (h) ensure

its operations to be effective and efficient according to the means of performance, profitability, and the safeguard of resources, while maintaining the reliability of financial reporting standards.

#### **1.1.6. Conclusions**

The first paragraphs of Chapter I focused on the basics of the company by analyzing questions such as ‘what is Amazona Chocolate?’ and ‘what does it stand for?’. In brief, it can be stated that Amazona Chocolate is a young and small company that sells organic high-quality Peruvian chocolate. Its vision is to be recognized in the local, and international markets by its differentiated line of products while satisfying the increasing demands of its clients, thus boosting its growth in the organic and sustainable market. The organization aims to achieve this vision by developing unique high-quality chocolate that is organic, fair trade, and sustainable, this statement can be referred to as Amazona Chocolate's mission. It was later indicated the values of the company and proposed the code of ethics. Innovation and excellence are keywords that describe the company's tools to achieve these objectives. The following paragraphs of the present chapter will seek to discover the characteristics of the industry where Amazona Chocolate performs by focusing on Porter's five forces model.

#### **1.2. Industry Analysis (Porter's Five Forces)**

The industry analysis of Amazona Chocolate will be based on the studies of Michael Porter (2008), who indicated that different forces affect organizations within the industry where they perform, and in order to formulate a competitive strategy, it is important to establish a connection between them. Porter's model assesses five different forces that shape the competitiveness of a specific industry, and they include the followings: bargaining power of suppliers, bargaining power of buyers, the threat of substitute products, the threat of new entrants, and competitive rivalry.

### 1.2.1. Bargaining power of suppliers

*Low-medium.* Cacao is the main raw material on which the operations of Amazona Chocolate depends. The current suppliers of the sector represent a considerable percentage of the cost of sales of the product. Thus, its margin is affected by the price of inputs in the market, by demand and by the competition of the producers themselves. According to Denegri, Galán, Gómez, and Raffo (2018), the resources mainly necessary for the production of cacao are adequate land, seeds, trained personnel, water, and financing. The suppliers of these resources have the best bargaining power over cacao producers since in Peru, cacao production is concentrated in small producers with low extension and quality lands (Instituto de Estudios Económicos y Sociales, 2016). Considering the above, it can be concluded that the negotiating power of cacao suppliers is limited since they are the base of the chain. Further, as a commodity, cacao is traded in the capital markets according to a price set by the global demand. Gonzales, Silva, Gálvez, and Mercado (2013) estimated that producers with fair trade certifications and organic products charge a premium that can be as high as US\$500 per ton, from which 60% of the price is for being certificated and 40% for being organic. However, the association of small cacao producers in cooperatives may increase their bargaining power, which can be managed by cooperation with businesses to contribute to the sustainable development of cacao.

The use of fertilizers from the Peruvian farmers is high (nitrogen, phosphate, and potash nutrients are mainly used), for which the bargaining power of these suppliers is high with respect to the producers (Denegri et al., 2018). However, in the case of cacao, the farmers are usually small producers with low incomes, thus they do not use chemical products, therefore their production is usually organic (Scott, Donovan, & Higuchi, 2016). Besides, one of the most important resources in cacao plantations is the workforce given that crops require various manual tasks to sustain it. According to the Instituto Nacional de

Estadística e Informática - National Institute of Statistics and Informatics (2018), there is a high availability of unskilled labor and a high percentage of jobs are informal in Peru, therefore the bargaining power of labor suppliers is also low.

Also, the industry is characterized by the marked tendency for the search of new flavors and textures. If a unique and differentiated product is developed by the supplier, then it would be a reason to increase their bargaining power. A clear example of this is the high cost of improved seeds and technical services for the improvement of producers' processes. However, it would require high investments and research, which would be difficult to afford by the producers, even if they are associated in cooperatives. In this regard, Amazona Chocolate has an opportunity and a competitive advantage, as it has achieved to develop a unique chocolate, both for the quality of its raw material and the sensory profile recognized by international institutions; that comes from the cacao beans harvested in the Ecoperlacha plantation which is owned by the company. Thus, the bargaining power of suppliers is considered to be low-medium as Peruvian cacao farmers are small producers and the cacao beans are traded as commodities, but producers are associating, and thus cooperatives are formed, which give them more power to negotiate.

### **1.2.2. Bargaining power of buyers**

**Medium-high.** Due to the diversity of products and companies in the industry, buyers have relatively medium to high bargaining power, however, educated buyers, who are aware of the characteristics of the organic chocolate products offered by the firms, might be attracted and retained if they are offered a high-quality product. Additionally, they are willing to pay a premium for these products if the characteristics satisfy their expectations (Scott, 2016). This is also applicable if taken into consideration that the products have fair trade and organic certifications. Chocolates are also traded through intermediaries, such as supermarkets, specialized wineries and stores, and more. These buyers have definitely a high

bargaining power, especially regarding price and payment periods due to their size and sales capacity. Finally, businesses such as restaurants, hotels, cafes, bakeries, and bistros are also important buyers in the industry (B2B). This segment of buyers has similar characteristics than direct consumers as they also value high-quality products since their end-customers (consumers) also do. This makes the bargaining power of buyers to be high.

In the case of Amazona Chocolate, they do not trade their products through intermediaries, but they seek to make a direct connection with the end consumer through farmer markets, which brings them the possibility to educate their clients. Also, they cooperate with different businesses in their B2B sales. This strategy is aimed to reduce the bargaining power of its buyers.

### **1.2.3. Threat of substitute products**

**High.** Confectionery products are usually considered as substitutes of chocolate, especially due to its high demand in local and global markets. However, due to the characteristics of the product commercialized by Amazona Chocolate, only other types of chocolates should be considered as substitutes for its products. Therefore, it could be considered that chocolates with milk, filled chocolates, chocolate based on cacao butter, chocolates with chemical additives and synthetic origin are substitute products. The companies that offer these substitute products are mainly big and already established firms, for which they can exert pressure so that the prices are kept at a low level and steal share from smaller firms. For this reason, substitutes can be considered to be a high threat to Amazona Chocolate because there are great offer and variety of these products in different sales channels that hinders the normal operations of a small chocolate company like Amazonas Chocolate.

However, it could be argued that the chocolate market comprises a varied structure of final prices for products that are differentiated according to their preparation components and

quality, with the aim of satisfying the needs of consumers at all socioeconomic levels. Further, in the case of organic chocolate, being part of a specific niche market, the substitutes would have to be considered as specialized and healthier for the final consumer. On the other hand, the constant innovation and research of firms in this industry result in better products that increase the loyalty of consumers, which suggests that the threat of substitute products could decrease. Nonetheless, constant changes in consumer habits and product demand in end customers should also be taken into consideration for an improved analysis of the threat of substitute products.

#### **1.2.4. Threat of new entrants**

*Low-medium.* Threats of new entrants are considered to be medium for the conventional chocolate industry as it is relatively easy to produce and maintain the run of the business. However, when considering products that are differentiated for its fine flavor and certified cacao beans production, threats of new entrants are low. To begin with, there are many requirements that need to be fulfilled by new entrants, for instance, organic and fair trade certifications. These products must certify that they comply with all the regulations and requirements, like proving their ingredients and processes are organic. Only by doing this, they are capable to obtain and display the organic logo on the label of its products. Thus, new entrants must be prepared to demonstrate the traceability of their beans and production process, which might discourage new companies. However, due to the trendiness and fame acquired by small and local firms in the last years, traditional producers are considering to extend their portfolio ("Las chocolateras," 2017 March) to include premium chocolates under the characteristic of "single plantation/origin" of cocoa beans. These traditional firms possess the necessary resources to fulfill any of the requirements previously mentioned. In this sense, the threat of new entrants could be shifted to be high if big firms decide to explore the markets of this industry.

### 1.2.5. Competitive rivalry

**Medium-high.** The company Amazona Chocolate, within the framework of the BioStartUp project funded by Innovate Peru (Amazona Chocolate, 2019c), has developed a new chocolate as a "Single Plantation" product, validating the rescued native cacao beans that grow in its farm known as "Ecoperlacha", located in the region of San Martin, Lamas province, in the north-east of Peru. The product is the result of an intense DNA analysis research investigation that guarantees the chocolate to be made is 100% of biodiversity, with important nutritional, physicochemical and sensorial characteristics. Thus, it differentiates the company from its main competitors, who have been working basically to guarantee the physical and organoleptic quality. The line of products from Amazona Chocolate have been gaining market coverage significantly in recent years thanks to these differentiated attributes. Although international brands are strong competitors in the gourmet chocolate industry, the advertising of the "Peruvian brand" has led to a higher revaluation of purely Peruvian chocolates, which have helped the company to position on the palate of consumers.

Amazona Chocolate has identified among its main competitors (Amazona Chocolate, 2019c) those companies that offer products with characteristics that are similar to its own products. One of them is Pacari Chocolates, an Ecuadorian company that works with Peruvian cacao, specifically from "La Quemazon", Piura; and has also been participating in the same international events as Amazona Chocolate. Pacari Chocolate is also present in the Peruvian market and under the concepts of organic and fair trade products. Pacari has a point in favor that is to be part of Ecuador's cacao cluster known as Nacional, whose genetics give Pacari products floral notes and concepts of genetics and origin. Additionally, Pacari has managed to develop raw processes, thus obtaining chocolate with a greater amount of antioxidants, and to maintain its profile of quality and promotion over the years, which makes them a strong competitor. However, among its weaknesses, it is found that Pacari Ecuadorian

cacao (Nacional) is from a unique ecotype of cacao, while Peru presents a more genetic diversity that can be exploited by local chocolate firms, as Amazona Chocolate has been performing (Pacari, 2019).

Considering products at the level of consumption, specialized pastry, and general gastronomy, another strong competitor for Amazona Chocolate is Belcolade, a Belgian company that belongs to the Puratos group. The firm presents a line of organic chocolates with a Peruvian origin coverage of 67.5%, and with certifications such as from the Rainforest Alliance. They work with different distributors and grant lower prices, with payment times up to 30 days. Amazona Chocolate is aware that Belcolade is one of its strongest competitors, and due to the differences in resource allocation, they are not able to compete with them; however, they are aware that under the concept of chocolate made in the country of origin, and by earning lower margins, they could gain around 10% to 20% of the existing clientele (Belcolade, 2019).

Another competitor is La Ibérica, which is a family business dedicated to the production, trade, and distribution of different products such as chocolates, toffees, marzipan, nougat, and other confectionery products. They have an important share in the southern area of Peru, principally in the regions of Arequipa and Cusco. Due to the location of its processing plant, in the region of Arequipa, La Ibérica utilizes in most of its production the "chuncho" cacao that grows in the Convention Valley, Arequipa. This cacao has given differentiated attributes to their chocolates, which has reinforced its predominance in the southern part of Peru. Further, La Ibérica has taken advantage of the great influx of tourists visiting Machu Picchu, located in the south-eastern region of Peru. The firm has developed chocolates with different cacao contents and with diverse presentations, aimed to attract this lucrative market composed by foreign tourists. They have also launched special presentations to celebrate special events as gifts and souvenirs. (La Ibérica, 2019)



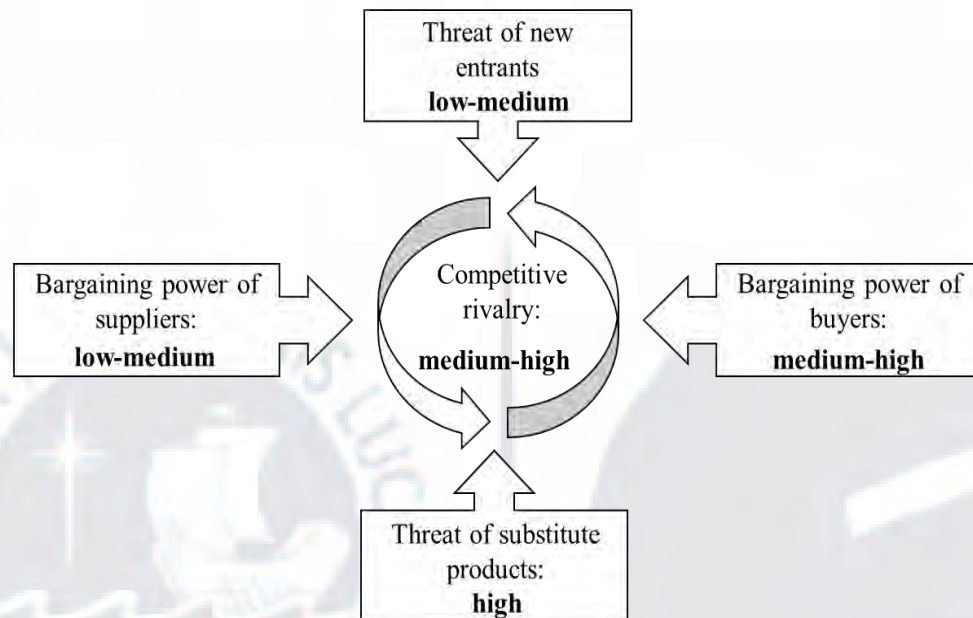
Another important competitor is Shattell, which is an artisan chocolate factory located in Lima. This firm acquires the cacao directly from the producers, recognizing the purchasing price for the work the producers perform by harvesting, fermenting and drying the fine and aroma cacao beans, this allows them to obtain chocolates with certain differentiated attributes compared to other firms. Its motto is "El buen chocolate nace en el campo", which translates to "Good chocolate is born in the field". At the moment, Shattell owns diverse presentations of chocolates from distinct inclusions and origins, whose percentage of cocoa varies from 70% to 100%. One of the main weaknesses of Shattell is that, since they do not own any plantation, the producers have the responsibility of obtaining good and high-quality cacao, but in most cases, producers are unaware of the genetic origin of their cacao. Due to the effect of segregation, they could lose certain attributes, which could eventually cause that some of the promoted brands could not continue to be offered (Shattell Chocolate, 2019). Having considered the different competitors in the organic chocolate industry, it can be established that the competitive rivalry is medium-high as there are several players in the market, however being a specific niche market, most of the firms are small with limited resources, but consumers expect unique high-quality products, for which the companies in this industry have to invest heavily in improving their chocolates, mainly through research and development centers, close collaboration with farmers, customer education, etc.

#### **1.2.6. Conclusions**

In Chapter 1.2, it was assessed the characteristics of the industry where Amazona Chocolate competes by using the model of Porter's five competitive forces (see Figure 3). (1) Bargaining power of buyers is medium to high since buyers have the power to choose lower price and higher quantity products in places like supermarkets.

However, as Amazona Chocolate's products are organic and high-quality, the target consumers have less bargaining power especially since the business is operated through

farmer markets, which means direct-sales, and B2B sales in order to reduce bargaining power as well. (2) Bargaining power of suppliers is rather low to medium due to its diversity, which depends on the different kind of suppliers and how they provide such supplies. For instance, bargaining power of labor supply or adequate land and other resources supply for production



*Figure 3. Porter's five forces analysis of the chocolate industry. Adapted from "The five competitive forces that shape strategy", by M. E. Porter, 2008, Harvard Business Review, 86(1), pp. 25-40.*

is limited due to the informality of labor market in Peru and most producers are small farmers. But those farmers who use sustainable practices could increase the power to negotiate price by associating in cooperatives. (3) The threat of substitute products is high, mainly from existing big firms which provide great offer substitute products through varies sale channels with lower prices. It is difficult to compete with large corporations that already have a big percent of market share. But by targeting a niche market, Amazona Chocolate is able to make use of its organic, good taste and high-quality products to educate consumers and build reputation to overcome the threat of substitutes. (4) The threat of new entrants is medium for those conventional chocolate related industries. And for those which focus on flavor differentiation, good control on production especially obtain certifications like for

cacao beans production or fair trade, the threat is relatively low. However, with increasing demand and more exploration of farmers, the threat has the tendency to rise through more competitions in such market. (5) Competitive rivalry is the key component to determine the competitiveness and profitability of the industry. After studying examples of existing competitors, it can be argued that Amazona Chocolate's differentiation strategy and product quality contribute to its attractiveness in the market and increase its power to compete with rivals locally for gaining market share. However, competence still remain strong for which it can be concluded that competitive rivalry is medium-high.

Table 3

*Summary of the Main Components of Porter's Five Forces Analysis*

Porter's Five Forces	Range	Elements
Bargaining power of suppliers	Low-medium	<ul style="list-style-type: none"> <li>-Main raw material: cacao</li> <li>-Small producers with low extension and quality lands</li> <li>-Price set by global demand</li> <li>-Informality of labor market</li> <li>-Organic production</li> <li>-Product differentiation (technology investment &amp; quality and flavor)</li> </ul>
Bargaining power of buyers	Medium-high	<ul style="list-style-type: none"> <li>-Educated buyers</li> <li>-Willing to pay premium for quality</li> <li>- Many selections in the market (size, price, sales)</li> </ul>
Threat of substitute products	High	<ul style="list-style-type: none"> <li>-High demand for confectionery products</li> <li>-Big, established firms that produce various kinds of chocolate</li> </ul>
Threat of new entrants	Low-medium	<ul style="list-style-type: none"> <li>-Differentiation products need many requirements (certifications, regulations)</li> <li>-Traditional producers likely to expand portfolio, new markets</li> </ul>
Competitive Rivalry	Medium-high	<ul style="list-style-type: none"> <li>-Niche market</li> <li>-“Single Plantation” product</li> <li>-Competitors (e.g. Pacari Chocolates, Belcolade, La Ibérica, Shattell)</li> </ul>

*Note.* Adapted from “The Five Competitive Forces that Shape Strategy,” by M. E. Porter, 2008, *Harvard Business Review*, pp.25-40.

### **1.3. External Analysis (PESTE) – Opportunities and Threats**

In this section, a PESTE analysis will be performed, in order to examine the external environment for the Peruvian cacao and chocolate industry, and through the assessment of five different factors: political, economic, social, technological and environmental (D'Alessio, 2015). These external forces bring challenges as well as opportunities and threats to the business which are important to evaluate to better understand the environment where the company performs, thus enabling the organization to limit any threat and take advantage of the opportunities.

#### **1.3.1. Political factors (P)**

Peru as a constitutional and presidential representative democratic republic country, it is based on a multiparty political system. The government powers are separated into three branches which are the executive, the legislative and the judicial. Citizens elect the president as the head of state as well as head of government to serve for a five-year term. According to La Contraloría General de la República, Peru is divided into 25 regions and the capital province of Lima (Contraloría General de la República, 2014). Since the political power in Peru is decentralized, people are more empowered and incentive to control their own lives by stepping into the decision-making process of the government. Besides, political parties use decentralization to gain support from people in favor of their election.

Decentralization of power is theoretically a good mechanism to bond people and government, as well as to engender more trust and to meet the requests and priorities of the people. However, corruption is a big threat in Peru, making the political system and its stability to tremble and be in jeopardy to be harmed. Corruption has infiltrated and spread to most of the regions and levels of hierarchy in the Peruvian political system. In 2018, 21 of 25 regional governors have been accused under charges of corruption or are already in jail for these indictments (Jaquette & Lowenthal, 2018). Additionally, according to El Peruano

Official Newspaper, vice-president Martin Vizcarra took office in replacement of the former president Pedro Pablo Kuczynski in 2018 after his resignation. Nowadays Kuczynski remains in house arrest as he is being investigated by money laundering with the aggravate of belonging to a criminal organization (“Expresidente”, 2019 April 28). However, Fitch Solutions indicate that due to the anti-corruption measures taken by the government and the last results in judicial matter, Peru’s political risk profile is expected to improve over the coming months, improving the public's opinion towards government (“Political Risks,” 2019 February). President Vizcarra is determined to fight corruption and his priority during his mandate is to address and tackle the problems of corruption. Lately, his government has initiated a new anti-corruption reform in order to achieve political trust and maintain political stability. Law 30424 introduces corporate liability for criminal transgressions associated with corruption, money laundering and terrorist financing. This law is a reflection of the OECD Anti-Bribery Convention standards, which Peru has not yet acceded; however, under an OECD Country Programme, the country agreed to follow the standards in order to reduce the levels of corruption. (Ellis, 2018 April 2).

Regarding the political environment in the cacao industry, the Peruvian government seeks to develop its growth and expansion through different organizations. The Ministerio de Agricultura (MINAGRI - Ministry of Agriculture), the Ministerio de Producción (Ministry of Production), and the Ministerio de Comercio Exterior y Turismo (MINCETUR - Ministry of Foreign Trade and Tourism), along with other public organizations such as the Comisión Nacional para el Desarrollo y Vida sin Drogas (DEVIDA - National Commission for Development and Life without Drugs) and the Comisión de Promoción del Perú para la Exportación y el Turismo (PROMPERU - Commission for the Promotion of Peruvian Exports and Tourism), have been promoting during the last years different events to position the Peruvian cacao and its derivatives in the national and international markets (“Promoverán

consumo,” 2018 July 17). In the cacao and chocolate industry, the most important event promoted by these entities, in collaboration with other private institutions, universities, and regional governments, is the “Salón del Cacao y Chocolate” which is held every July in the city of Lima. The aim of the event is to introduce national and international economic agents of the cacao production chain, e.g. producers, manufacturers, entrepreneurs and exporters of cacao and its derivatives, to exchange information, knowledge and to establish and reinforce contact networks in order to promote the commercial activity of this good in the national and international markets (Salón del Chocolate y Cacao, 2019).

In 2013, the Peruvian government enacted the Law for the Promotion of Healthy Eating in Children and Adolescents (Law N° 30021) with the aim to effectively protect the right to public health and the adequate growth and development of people. To do so, the law intends to reduce and, with time, eliminate diseases associated with health problems such as obesity and chronic diseases. The law demands stricter supervision of the information and advertisement of food and non-alcoholic beverages. The Law indicates that the incorporation of advertising warnings on the front of processed products facilitates the consumer to make informed decisions in the selection of products that are healthy. According to the Ministry of Health, the advertising warning octagons will have to be displayed on the labels of soft drinks and processed foods, whose content of sodium, sugar and saturated fats exceed the technical parameters displayed in table 4 (Decreto Supremo N°012-2018-SA, 2018). In 2017, the Ministry of Health published the “Warning Manual for Processed Product Food Labels”, under the Law 30021, to enforce the regulation of labeling soft drinks and processed foods. To this point in time, only businesses whose annual sales exceed 150 UIT (around S/ 360,000) are required to display the warning octagons on their products (mainly supermarkets). However, other businesses that are out of this criteria will still have to comply with the regulation after June 17, 2020. The Instituto Nacional de Defensa de la Competencia

y de la Protección de la Propiedad Intelectual (INDECOPI - National Institute for the Defense of Competition and the Protection of Intellectual Property) will sanction any breach of the regulation with a fine that might sum up to 700 UIT (around S/2.9 million) to the product manufacturer, and even to the seller (Paz Campuzano, 2019 June 18).

Table 4

*Technical Parameters and Entry Term into Force of Law N°30021*

Technical Parameters	Entry term into force	
	After 6 months of approval of the Advertising Warnings Manual	After 39 months of approval of the Advertising Warnings Manual
Sodium in solid foods	Greater or equal to 800 mg / 100g	Greater or equal to 400 mg / 100g
Sodium in drinks	Greater or equal to 100 mg / 100ml	Greater or equal to 100 mg / 100ml
Total sugar in solid foods	Greater or equal to 22.5g / 100g	Greater or equal to 10g / 100g

*Note.* Retrieved from “Aprueban Manual de Advertencias Publicitarias en el marco de lo establecido en la Ley N° 30021, Ley de promoción de la alimentación saludable para niños, niñas y adolescentes, y su Reglamento aprobado por Decreto Supremo N° 017-2017-SA,” by Decreto Supremo N°012-2018-SA, 2018, *El Peruano* (<https://busquedas.elperuano.pe/normaslegales/aprueban-manual-de-advertencias-publicitarias-en-el-marco-de-decreto-supremo-n-012-2018-sa-1660606-1/>).

### **1.3.2. Economic factors (E)**

The economy in Peru has been steadily growing over the years. As one of the largest economies in Latin America, Peru has a good economic foundation and low level of public debt which almost decreased in half, from 44.3% of the GDP in the year 2004 to 26.4% of the GDP in 2018 as found in Nordea Trade website, one of biggest banks specialized in trading opportunities (Export Enterprises, 2019 June). The great cut of public debt evidences the capabilities of the government to pay off its borrowing and also reveals the growth of economic development in the country. Besides, according to Coface – organization specialized in credit insurance and risk management, the Central Bank of Peru, as an autonomous entity, is enabled to manage the supply of the sol, Peruvian currency, which is currently with a floating value, however, it is also in responsibility to intervene when huge fluctuation of exchange rate occurs (“Major Macro Economic,” 2019 February). The stability of the exchange rate is an indicator of a correct economic performance in the country, and it

is critical for businesses to generate profit and also gives confidence for investors. The strong and stable economic position motivates people and attracts investment into the country. In this sense, Peru has shown a good economic profile in the last years, as its currency has remained stable.

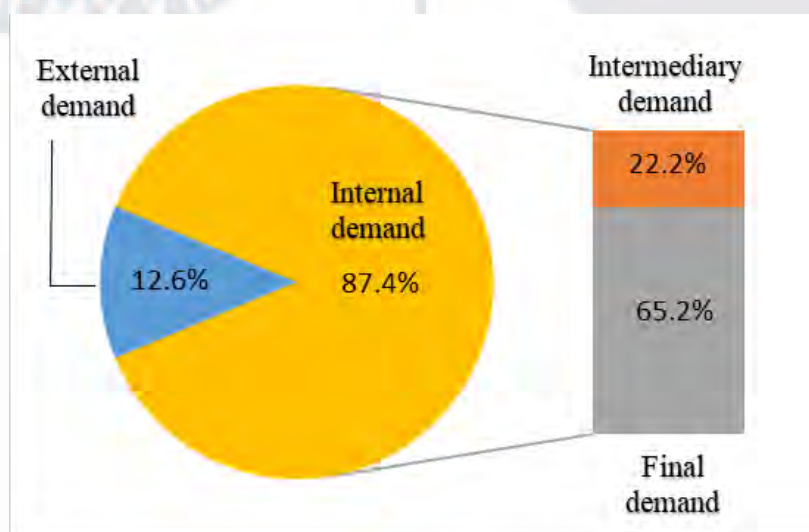
Another important condition for economic development is trade. In this regard, Peru is very open to international trade, being a member or associated member of the World Trade Organization (WTO), Andean Community, Asia-Pacific Economic Cooperation (APEC), MERCOSUR and being in negotiation with several countries to sign trade agreements across the world (U.S. Commercial Service, 2018 June 11). Trade agreements facilitate trading as they include free-trade, tax, and tariff reduction, etc., creating opportunities for the country to export internationally and also lowering the market production cost by importing cheaper materials. Although it might be seen as harmful for domestic businesses as local firms will have to compete with foreign companies, competition promotes production, quality of products, and innovation, which leads to economic growth.

One important factor that the government is keen to address is to modernize the labor market as the Peruvian labor market is highly informal and also since it is essential to keep with the growth of the economy and to maintain competitiveness. To do so, the Social Protection Commission has been set up to improve the social security system while protecting labor and reducing informality. The IMF estimated that the growth gains from this proposal might be notable; however, some policies might be controversial for the public opinion as they uphold for loosening policies meant to reduce labor taxes and firing costs in order to decrease labor cost and increase productivity (Export Enterprises, 2019 June).

As for the Peruvian cacao industry, according to the National Institute of Statistics and Informatics (INEI, see Figure 4), 12.6% of the production of cacao and its derivatives are destined for the external market (especially products as cacao beans and cacao butter), 22.2%



cover the intermediary demand (especially demanded by confectionery, bakery, dairy products manufacturing, and chocolate companies and restaurants), and 65.2% the final demand (household consume) (Instituto de Estudios Económicos y Sociales, 2016). The Peruvian exports of cacao, chocolate and other derivatives has grown considerably in the last years, resulting in an increase of almost 7 times the trade balance for these goods in the year 2015 compared to the same figure in the year 2006 (see Figure 5). And in only one year being (from 2014 to 2015), the trade balance increased in 16.7% (from US\$189 million to US\$221million), which is mainly due to the greater exported amount of cacao beans and cacao butter to external markets (see Figure 6 and Figure 7). However, the trade balance for chocolate has been reducing over the years, having a higher amount of imports than to exports (see Figure 8). During the year 2015, the main countries of destination for the exports of the Peruvian cacao and its derivatives were the Netherlands, the United States, Belgium, Italy, and the United Kingdom (see Figure 9). On the other side, the main importer countries were Ecuador, Chile, the United States, Colombia, and Malaysia (see Figure 10) (Instituto de Estudios Económicos y Sociales, 2016).



*Figure 4.* Demand for cacao, chocolate and other derivatives.

Adapted from *Industria del cacao, chocolate y otros derivados* (p.5), by Instituto de Estudios Económicos y Sociales, 2016, Lima, Perú: Sociedad Nacional de Industrias.

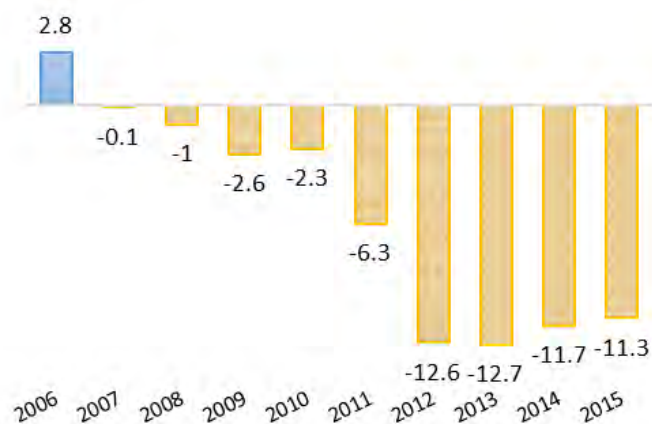


Figure 5. Trade balance of chocolate (millions of US\$).

Adapted from *Industria del cacao, chocolate y otros derivados* (p.9), by Instituto de Estudios Económicos y Sociales, 2016, Lima, Perú: Sociedad Nacional de Industrias.

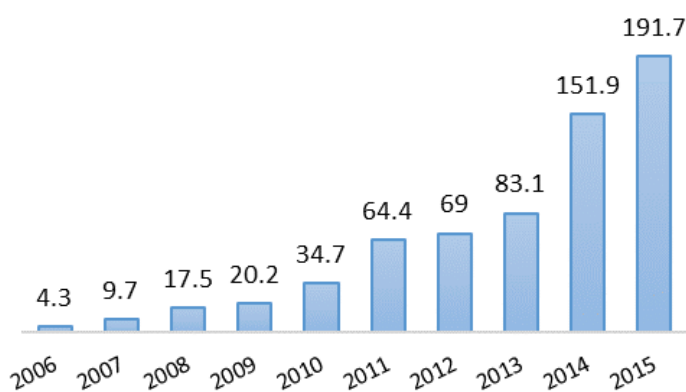


Figure 6. Trade balance of cacao beans (millions of US\$).

Adapted from *Industria del cacao, chocolate y otros derivados* (p.9), by Instituto de Estudios Económicos y Sociales, 2016, Lima, Perú: Sociedad Nacional de Industrias.

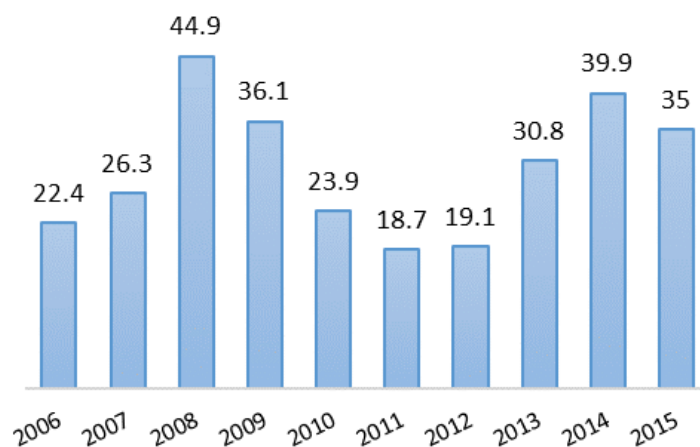


Figure 7. Trade balance of cacao butter (millions of US\$).

Adapted from *Industria del cacao, chocolate y otros derivados* (p.9), by Instituto de Estudios Económicos y Sociales, 2016, Lima, Perú: Sociedad Nacional de Industrias.

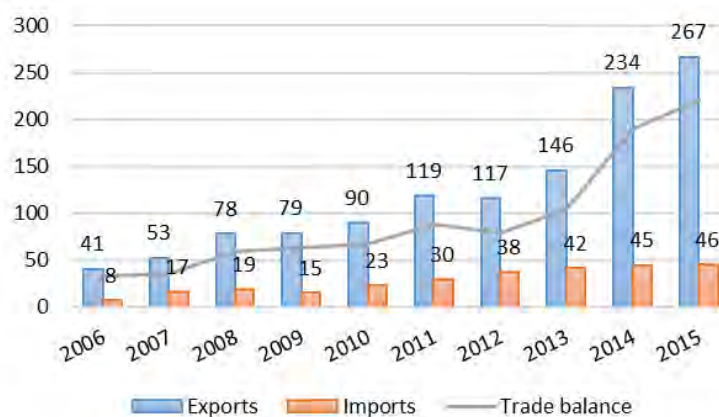


Figure 8. Imports, exports, and trade balance of cacao, chocolate, and other derivatives (millions of US\$).

Adapted from *Industria del cacao, chocolate y otros derivados* (p.10), by Instituto de Estudios Económicos y Sociales, 2016, Lima, Perú: Sociedad Nacional de Industrias.

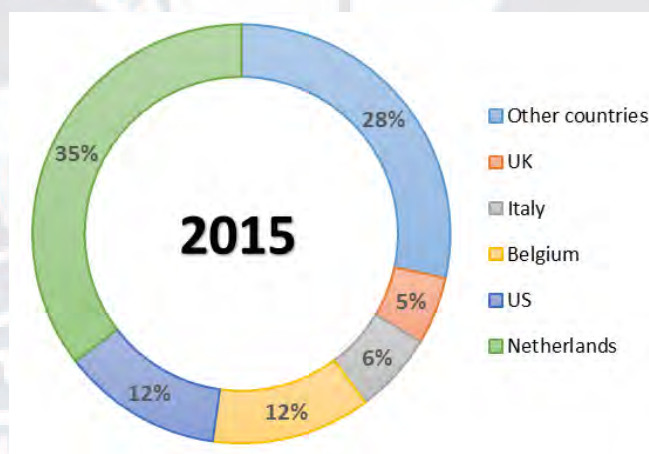


Figure 9. Exports of cocoa, chocolate, and other derivatives by country of destination, 2015.

Adapted from *Industria del cacao, chocolate y otros derivados* (p.15), by Instituto de Estudios Económicos y Sociales, 2016, Lima, Perú: Sociedad Nacional de Industrias.

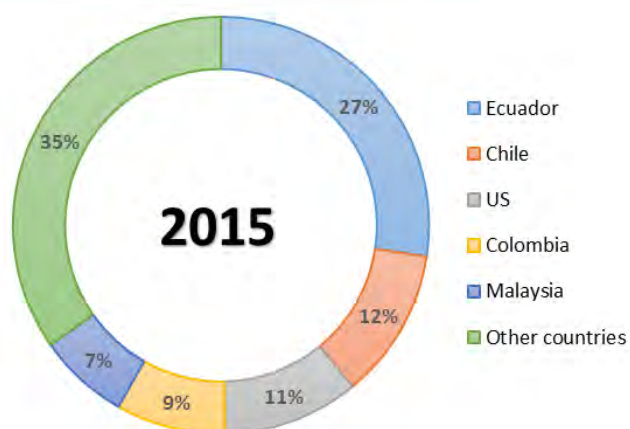


Figure 10. Imports of cocoa, chocolate, and other derivatives by country of origin, 2015.

Adapted from *Industria del cacao, chocolate y otros derivados* (p.15), by Instituto de Estudios Económicos y Sociales, 2016, Lima, Perú: Sociedad Nacional de Industrias.

### 1.3.3. Social factors (S)

From the social perspective, according to Andina newspaper, chocolate consumption in Peru is significantly increasing which lays the foundation for the increase of the local cacao production and chocolate manufacture (“Promoverán consumo,” 2018 July 17). As the demand in the market goes up, more farmers and raw materials are required to supply the needs of customers. The Rikolto Veco organization indicates that cacao chain business engenders more than 7 million wages every day in Peru, and more than 90,000 families are involved in such activities (“High quality,” 2019). Within the country, an association that provides a platform for Cacao producers is the Asociación Peruana de Productores de Cacao (APPCACAO) established in October 2014. This association comprises more than 30,000 producers and nearly 25,000 hectares in production for cacao. The mission of the cooperative is to create and promote the image of Peruvian Cacao as well as its derivatives while enhancing production, productivity, and consumption through a national and international level (Asociación Peruana de Productores de Cacao, 2019). Because APPCACAO supports smallholder producers, being part of the cooperative benefits them as they are able to overcome the challenges that occur during growing and processing stages. By providing those opportunities, the relative families and communities benefit by earning a higher income and improving the quality of life in order to create long-term prosperity. Besides, while trying to develop the good flavor cacao, the association also encourages active participation from women and youth generation in order to show its social responsibility (“High quality,” 2019).

Even though chocolate and cacao industries benefit the society of Peru as a whole, the social conflict in the country still remains a potential problem in the industries. According to the Ombudsman’s Office, the average score for Peru’s social conflict measurement is around 178 throughout March 2017- March 2018. The score is considerable high, especially starting from the year of 2018 from which the trend has been increasing and arose to 188 on March of

the same year (Jimenez Manottupa, Mezarina, Perez & Quinto, 2018). Other than that, La Defensoría del Pueblo indicates that one of the main types of conflicts that is revealed in the country is related to socio-environmental conflicts which occupies 66.5% of the total conflicts accounted for March 2018 (De Echave, 2018 April 19). Although 64.8% of them are related to mining industries and only 2.4% are related to the agro-industrial sector, in a general view, social conflicts lay hidden dangers in the future for industries that are heavily dependent from the work of cooperatives and farmers. Such as a great strike by farmers which might be traced by personal exemptions or unfair wage treatment, etc. could impact the operation of the company, and profoundly influence the profit that could be generated as well.

#### **1.3.4. Technological factors (T)**

The Technological Readiness Ranking published by The Economist Intelligence Unit in 2018 has shown that Peru moved from the 73rd position out of 82 countries to the 69th position ("Peru struggles," 2018 September 14). In this sense, it can be seen that Peru is improving its adaptation to technological change in this technology-driven era. However, compared to other countries and although this small improvement indicates efforts for improvement, Peru still has a long way to catch up with the technological capabilities of advanced countries.

Cacao is an essential raw material for the production of chocolate, a high genetic diversity of plants is revealed in Peru as cultivation crops (Markiefka, 2016). But because of a lack of experience, technical knowledge, and technology used for the cultivation of cacao; many small farmers still rely on the use of old techniques, like burning forest to harvest, which decrease the yield, quality, and final price of cacao beans. Besides, post-harvesting is very important to achieve the finest flavor formation for cacao beans since they do not have any determinants of chocolate aroma at first and flavor profile is the key measurement to

examine the quality of beans (Wickramasuriya & Dunwell, 2018). Therefore, biotechnology would play an important role in the quality of the final products; however, as it was indicated, Peru's farmers still lack the technical and technological capabilities to provide the best production of cacao beans and chocolates.

According to the Ministry of Agricultural and Irrigation of Peru, harvestable cacao is growing annually worldwide because the harvested areas are expanding (Romero, 2016). However, the biggest harvested areas are still located in Africa, which accounts for over 70% of the world total production, while the production in Latin America has decreased before the year 2013. But during the year, the new projects of cultivating fine and flavored cacao beans in Ecuador, Peru and Colombia Amazon have helped the production percentage in Latin America to increase from 14% to 17.7%. As for Peru, the volume of production and harvested area are steadily increasing, and the average yield of Peru is 650-700 Kg/ha which is above the world average of 485 Kg/ha, but still below from countries like Guatemala, Thailandia, Santa Lucía, among others (Romero, 2016). The technology factor is associated with productivity and production yield. With more investment projects or technological support for production, the growth of qualified cacao could be stimulated in order to be introduced in the market which also increases the number of fine chocolates. For example, there is a Peru Cacao Alliance which is recognized by the United States Agency for International Development (USAID)'s largest Global Development Alliance and also the world's largest donor-funded agroforestry program (Alianza Cacao Perú, 2016). The Alliance is in pursuit to add value and make a change along the cacao supply chain in order to build a market system that helps farmers attract more investors and practice new technologies. Nowadays, more and finer cacao beans are produced through the participation of the Alliance with the newest technologies and post-harvest techniques (Alianza Cacao Perú, 2016). This also helps the small cacao farmers to generate more profit and wealth.

### 1.3.5. Environmental factors (E)

Peru is a fast-developing country that plays a significant role in the world for producing and exporting raw materials; however, environmental issues have stood out driving people's attention. According to Markiefka (2016), major environmental concerns in Peru are related to pollution in water and air caused by formal and informal mining activities, as well as for deforestation. Throughout recent years, deforestation problems are still rising and need to be treated properly for protecting and strengthening the ecological environment. Cacao farming is a contributing factor to deforestation in rainforests, the farming process also leads to the issues of soil erosion and fertilizer-use (Nieburg, 2015 June 29). Some farmers use improper practice such as moving crops out of the shade which likely to have further growth weeds and pests in the farm. The more treatment with herbicides and chemical sprays contribute to soil erosion and drop in cacao production as well as harm to human health. The soil erosion is much higher when farmers are not using shade and put crops under full-sun condition, and more fertilizer needs to be used in order to increase yields which could result in negative impact through potential misuse of fertilizer (Nieburg, 2015 June 29).

Nevertheless, Pinto Cieza indicated in her research for the Universidad Agraria La Molina, that Peru created the Ministry of Environment in the year of 2008 to be the national authority in environmental issues as the country was facing several environmental problems caused by a lack of national authority and due to weak environmental legislation (Pinto Cieza, n.d.). From this point, the nation has become more aware of the environmental problems that strike the country, and now take the challenge to confront and resolve such conditions. By seeking support from the World Bank, Peru's government was able to establish environment agencies like the Ministry of Environment, and the National Service of Environmental Certification for Sustainable Investments to assign clear responsibilities to confront the most damaging environmental problems. The government budget spent on

environmental improvement greatly increased from US\$16 million to US\$71 million from 2012-2015 (Sanchez-Triana, 2017 January 31). With more effort, commitment, control, and monitor for protecting the country's natural environment, Peru is expected to move to a better ecosystem and create a higher and healthier living standard for its citizen.

### 1.3.6. Conclusions

To conclude the above study, Table 5 summarizes the main opportunities and threats identified from the external environment evaluation in Peru and the related industries to cacao and chocolate. This assessment is convenient to have a better idea of how the surrounding environment of the company is, which gives the convenience to recognize the external opportunities to exploit potentials, and the external threats to properly reduce risks (D'Alessio, 2015).

Table 5

*External Opportunities and Threats of the External Environment Where Amazona Chocolate Performs*

Opportunities	Threats
<ul style="list-style-type: none"> <li>- Government institutions and organizations are promoting local cacao and its derivatives</li> <li>- Peru has strong economic position and very open to international trade</li> <li>- Increasing consumption of chocolate</li> <li>- More projects and investments in technological support for Cacao production</li> <li>- Better awareness of environmental issues</li> </ul>	<ul style="list-style-type: none"> <li>- Fighting corruption is still underlying problem to maintain political stability in Peru</li> <li>- Informality of labor market</li> <li>- Social conflict in Peru society is relatively high</li> <li>- Adaptation to technological change is slow such as techniques for cacao yielding</li> <li>- Soil erosion and deforestation</li> </ul>

*Note.* Adapted from *Proceso Estratégico: Un enfoque de Gerencia* (3rd ed., p.268), by F. A. D' Alessio, 2015, Mexico D.F: Pearson Educación.



#### **1.4. Internal Analysis (AMOFHIT) – Strengths and Weaknesses**

This part of the report will focus on the internal activities of Amazona Chocolate. The analysis for the internal environment is based on the AMOFHIT methodology (D'Alessio, 2015). This is a tool to analyze the internal environment of firms and evaluates the different departments of a company, among them the areas of administration and management (A), marketing and sales (M), operations and logistics (O), finance and accounting (F), human resources (H), information systems and communication (I), and technology (T). The same sequence will be used to explain and describe the topics applied to Amazona Chocolate in the paragraphs underneath. It should provide an overview of the strengths and weaknesses of the internal environment of Amazona Chocolate.

##### **1.4.1. Administration and management (A)**

This paragraph will discuss the leadership levels within Amazona Chocolate. The company was founded in 2013 and is currently lead by general manager Vilsic Bocangel. Before Bocangel became general manager, the company was led by Lourdes Lares who oversaw the company for almost five years. Both have extensive experience in the cacao/chocolate industry and the organic industry. This experience has led them to where the company is now.

Lourdes Lares does not work full time for the company anymore, but she is still extremely involved on a weekly basis. Her function is to help the company expand and grow in a sustainable and healthy way, but she is also a key driver in the research development area of the company. A good way to refer to her is as a knowledgeable external consultant. Lares has many years of experience in the cacao and coffee industry but is nowadays mostly focusing on the research side of the industry. She has executed research regarding social, environmental, and economical sustainability, but also regarding carbon emissions of cacao

plantations. In the past few years, she has initiated and executed several plans to severely change and improve Amazona Chocolate's profile in the market.

Vilsic Bocangel, who has been the general manager since 2015, has just as much experience in the chocolate industry as Lares. He has worked for several years in the chocolate industry promoting the Peruvian cacao on the national and international market. Besides this, he has been working on designing new chocolate products and has also been in charge of several projects in the development of his family's farm and the cacao bean industry. Both Lares and Bocangel form a close team that has succeeded to create a sustainable company and set the organic and high-quality products of Amazona Chocolate in the Peruvian market.

Bocangel oversees all the daily operations of the company. All departments report directly to him (production, packaging, administration, sales, etc.). Lares occasionally joins the table to help the company on a project basis. To arrange external production and to handle the packaging department, Bocangel employs a supervisor, who is responsible for the flow of products between the supplier of chocolate, the stock, the packaging, and the distribution to the sales stands. One could refer to him as Bocangel's right hand. Regular employees are hired to pack and prepare the products, but also to sell the finished goods on the various (farmers and vegan) markets. In total, the company employs five full-time employees and approximately seven part-time employees (Amazona Chocolate, 2018). Interesting notion, two-thirds of the employees of Amazona Chocolate are women. Both Bocangel and Lares value equality and strive for women empowerment (Lares, 2016 July 12)

The management of Amazona Chocolate has a deep understanding of the cacao industry in Peru. Both Bocangel and Lares are experienced in the industry and they know what they are doing. This is definitely a big strength of the company. Besides this, both Bocangel and Lares are constantly involved in different projects within the chocolate and

cacao industry which is beneficial for the company as well. Another strength is the fact that 60% of the employees work under part-time schedules. This allows the company to quickly scale up or down its labor when necessary. Among the weaknesses of the company, one can find that the general management is very occupied, as he has to manage all the different departments. This is a typical weakness of smaller companies. Time and money are of the essence, so the general manager should spend his time wisely in order for the company to succeed.

#### **1.4.2. Marketing and sales (M)**

The second paragraph of the internal analysis will focus on the marketing and sales of Amazona Chocolate. The company has primarily focused on selling products that are organic and using 100% Peruvian cacao, for which its aim is to distribute them in a niche market by offering a product that really differentiates them from their competitors. Besides, in the last years, the organic chocolate sector has shown to be a success; however, due to rapid changes in trends, there have been changes in Amazona Chocolate's marketing plans. Several business and marketing plans have been used to create a perfect strategy. This paragraph will use the Marketing Mix (4P) to describe the context for the firm.

**Product.** As discussed earlier, Amazona Chocolate focuses on the organic chocolate industry. Its chocolates are distributed in different presentations, such as bars, jars, nibs, and drops, and they are made from cacao beans from different parts of Peru. The most important regions from where the company acquires its cacao beans, at the moment are Piura and San Martin. These products are differentiated by their percentages of cacao present in the chocolate, which ranges from 55% all the way up to 82%. The chocolate is solely composed of two ingredients; cacao beans, from which it is obtained the cacao paste and butter, and sugar. The beans come from farms (cooperatives) that are certified as fair trade and organic, which is an important characteristic that the raw materials must have in the organic chocolate

business. Regardless of this, Amazona Chocolate outsource the chocolate processing to companies that also hold the organic certification. In this sense, the entire supply chain of Amazona Chocolate is considered to be fair trade and organic, which allows them to advertise their products as such. This is a big strength for the company and it is certainly their USP (unique selling point), as it allows the firm to differentiate its products from others. Further, the firm has even invested in projects to make its packaging compostable and biodegradable, which is also a big strength for the company.

**Price.** The price of the products could be considered as a weakness, since it is much higher than other chocolate products. Cacao beans are sold by cooperatives based on a certain formula, which considers the bean's price from the commodity stock market and adds an organic tax and a bean-to-bar tax (Cooperativa Agraria Cacaotera ACOPAGRO, 2019). However, this price can be justified towards the customer, since Amazona Chocolate's entire chain is certified as organic and fair trade. This makes its products to be more expensive. Last year, the company processed over 23.1 tons of native cacao bean that were bought for US\$4,100 per ton. These beans produced 22 tons of chocolate from which 14.3 tons were turned into coins, 1 ton into small and large bars, 3.3 tons into cacao powder, 1.1 tons into cacao butter, and 2.2 tons into cacao drops (Amazona Chocolate, 2018). Sales in the same year approximated around S/800.000 or US\$250.000 (Amazona Chocolate, 2018).

**Place.** Amazona Chocolate is focusing on the national, local, market. Most of its sales come from the stands that they open on local farmers and vegan markets. Besides this, the company also works under B2B platforms. By selling its products to bistros, hotels, and cafes, its clients are able to use Amazona Chocolate's products to accompany their own products - for instance, coffees - or use them as ingredients in their processing of cakes, ice cream, and more. This is seen as a strength for the firm as it makes customers to be very close to the company by providing a good service with high standards. Further, since Amazona

Chocolate's sale staff is fully trained on all the competitive advantages of the company - they know all about its product's certifications, production of cacao beans and chocolate, and more - and the stands in the farmer/vegan markets allow the clients to closely bond with the company; then Amazona Chocolate is able to educate its customers, creating a community along with customer loyalty. This adds a lot of value and is definitely considered to be a strength of the firm. On the other hand, a weakness of this strategy is that the market cannot really grow unless an expansion opportunity is seen; however, the company aims to provide Peruvians the opportunity to eat Peruvian chocolate, as most of the good and high-quality chocolates are exported to international markets. Also, the company does not deliver at the customer's location, since it is not able to guarantee the cold chain for the products and is not willing to take the risk with a sensitive organic product (no preservatives).

**Promotion.** A hot new product following all the current trends of the food industry needs to have an online presence. Thus, Amazona Chocolate is very active on all platforms and social networks. Mainly the firm has strong presence and is very active in platforms such as Instagram, Facebook, Twitter, LinkedIn, and also in its website, which has definitely helped them to grow and become a larger company. Besides, the company is close to the customer, and they feel this connection to the brand. The customers stay in touch with all the new products, but also with all the special advertising. In this sense, the way the company handles its internet platforms is definitely a strength. Also, another strength for the company is the fact that its products have won different awards. Amazona Chocolate's products have won a gold medal from the Academy of Chocolate in 2018 and also the UK Great Taste from 2017.

### **1.4.3. Operations, logistics and infrastructure (O)**

The third part of the AMOFHIT analysis discusses the capabilities and management of the supply chain of the business. Amazona Chocolate does not produce the chocolate itself,

rather it outsources the process to other companies. The sequential process of its supply chain comprises the purchase of certified cacao beans from one of the bean cooperatives in either San Martin or Piura, which are then shipped to Lima, from where they are transported to one of the factories where the beans are processed in order to obtain the array of products. The companies working with Amazona Chocolate can together produce up to 80 ton per year; however, they only produced 22 ton (28% of its capacity). Using external capacity for production is a strength for the company, as it allows them to just announce its production requirement every time they are needed. All the concerns that Amazona Chocolate have to put in this process are based on the transportation of the raw materials to the factories, and a few weeks later the firm has its products ready to be sold. This also allows them to cope with the uncertainty of demand as there are no costs attached in the production process. On the other hand, some risks could be identified. One of them would be the concern that factories become busy, and they do not have the production capacity to fulfill Amazona Chocolate's requests. Then, this is a weakness for the company since it will not be able to serve its customers.

The packaging process is handled by the company itself. As most of the coins come to the warehouse in bulk, employees have to separate the large packages and transform them into smaller portions. A strength of this procedure is that the company is able to evaluate the final quality of its products. However, a large weakness of this procedure is that the firm needs to deal with the extra handling of the products, which is surely associated with the extra use of resources and costs. Nonetheless, if the packaging were to be outsourced, then there will also be an involvement of higher costs. In this sense, it would be advisable to assess if Amazona Chocolate's employees could arrange the packaging themselves for a better price. This is an issue that the consultancy project could have to look at the present report.

To arrange its logistical processes, the company contracts local carriers, and instruct them when and where to pick up their products. The same strengths and weaknesses can be identified in this matter. If there is no necessity for transportation, then the company would not have any cost. However, if the firm needs for transportation, but the carrier is occupied (and the company does not have a vehicle of its own), the cost might increase drastically. Transportation from and to the markets is arranged with a small company vehicle, which contributes in the flexibility to respond on when and where to go, but it would have to carry the cost for the vehicle even if there is no market.

Also, the company does not deliver its products to its customers. They have to come to the local markets to purchase Amazona Chocolate's products. This is because the firm is unable to guarantee the cold chain for its chocolates, as it was mentioned before. A weakness that is identified from it, is that nowadays customers require home delivery. On the other hand, a strength is that customers will come to one location which will reduce the overall transportation cost.

#### **1.4.4. Finance and accounting (F)**

The finance and accounting department at Amazona Chocolate is not very large. These operations are executed fully by the owner and general manager of the company, who has a little notebook in which he keeps track of the financial and accounting numbers of the firm. One could refer to it as the manager's own bookkeeping system. Besides the notebook, Bocangel and the warehouse manager of the firm, keep track of the revenues, costs, income, and expenses. All the information is constantly kept in documents that used to be recorded in computer like spread sheets; however, not all the data have been digitalized yet.

Bocangel is in charge of all the revenues and costs the company makes. Revenues for Amazona Chocolate in 2018 summed up to around S/800,000, which is roughly US\$250,000. The revenues from the company have been steadily increasing over the past few years,

making the firm financially stable. The system has proven to be functional; however, it will be unsustainable once the company starts expanding. This is a weakness of the firm as it is hard to keep track of the numbers in a notebook since it is all analog. Besides, the chance of losing the information is all-time present. Losing analog data is extremely dangerous in current society, and focusing more on online bookkeeping would be a better way of storing sensible data for a company like Amazona Chocolate since it is an easier, safer, and more convenient way of secure important accounting and financial information.

Last but not least, the process of collecting, organizing, and storing data in an analog manner does not help to create a benefit for the company. It is labor intensive to keep track of everything and it is even harder to create an overview of the firm. Simple online tools could drastically improve the situation and provide a better insight in what the financial situation of the company looks like.

To conclude it can be established that the company has interesting points of potential improvement in the finance and accounting department. For this reason, the remainder of the report will mostly focus on this part of the organization. The consultancy team will focus on the collecting and organizing process of the data (costs and expenses) of the firm. In this sense, it will provide the company with ideas to turn their weakness into strengths.

#### **1.4.5. Human resources (H)**

Amazona Chocolate is not large enough to have its own human resource department. Bocangel (and Lares) are in charge of the hiring of new employees. They search, select, and employ new workers. As mentioned earlier, the company employs twelve people, the majority of which works part-time. The benefit of this labor scheme is that the company is able to schedule its workers whenever they are needed. This is beneficial for Amazona Chocolate's expenditures since it will not have a large amount of salaries to pay each month if the business is not doing so well. On the other hand, the part-time staff is more likely to move



away from the company, because they might get better deals or more working hours in other companies.

Employee training is a resource that Amazona Chocolate values greatly. All employees are heavily trained when working for the company, as they need to be able to educate the customer about all the differentiated characteristics of the products offered by the firm, among them, the origin of the cacao beans, the certifications held by the firm, the research findings of the company, etc. Therefore, it is critical that the staff is well-trained, and this is recognized to be a big strength of Amazona Chocolate. However, training comes with a cost, but customers highly value the personal approach in which the salespeople discuss and explain all the ins and outs of the products. As a consequence, the customers know better what they are buying, and value more the quality of Amazona Chocolate's products. This extra piece of education provides the company with a unique competitive advantage. The setback of this is that whenever the staff leaves, knowledge also leaves; nonetheless, this is a risk that is faced by any other organization. One should think that even if employees are trained and leave, it would be further harmful to not train them, thus they would stay but would not add any value to the business.

#### **1.4.6. Information and communication systems (I)**

The 'I' part of the AMOFHIT analysis refers to the information and communication systems that the company uses. Since Amazona Chocolate is a relatively young company, it does not use many sophisticated systems. For example, cost analysis and inventory management are manually done, with low support of Office programs such as Microsoft Excel, which is used since it is low cost and easy to use program. At the moment, it is considered to be neither a strength nor a weakness for the company. Many small companies are keen to use Office programs as they are effective for the cost involved. Besides, the company uses regular phones and WhatsApp as a mode of communication, especially to

make coordination more efficient between office employees, outsource partners, suppliers, customers, and more. Considering the size of Amazona Chocolate, this is identified to be a strength for the company as employees are able to communicate rapidly and for an affordable cost. Internal accounting is done using a basic computer program. To conclude this paragraph, it can be argued that this part of the chain does not really have strengths nor weaknesses; rather it is just suitable for a small, young company such as Amazona Chocolate, however some improvements could be managed such as digitalization.

#### **1.4.7. Technology and research and development (T)**

Lastly, this internal analysis will focus on the technology and research and development strategy of the company. The firm is in constant search of new partnerships that provide its products with higher differentiated attributes. For example, they recently started to cooperate with Origin Partners, a company that owns a factory that is more modern and holds more certifications than Selva Alta, its other production partner. However, Origin Partners does not yet own all the necessary machines to produce all the products demanded by Amazona Chocolate, for which the firm still continue working with other factories. Although the latter facilities own older machines and work under lower standards, the job is properly performed. In this sense, technology is affecting the company's processes and operations. The assessment of this matter indicates that working with modern facilities is definitely a strength since it will improve speed and quality to the company. Nonetheless, the older factory is good as well since it delivers the product in the right quality and price.

Regarding research and development, Amazona Chocolate has a big strength. Both Bocangel and Lares are involved in research in the cacao industry. For example, Amazona Chocolate is now working with a research and development center to preserve the genetic differentiation of each of the cacao varieties encountered in the Ecoperlacha farm. This is perceived as a big strength since the study resulted in the development and continuous

improvement of flavor profiles in their beans. The constant feedback with farmers also helps to improve the growing and postharvest process. The quality of the beans and the chocolate is really important for Amazona Chocolate as well, for which the value is very high, making its marketing campaigns to be very focused on promoting these findings. Thus, the continuous involvement of the leaders of Amazona Chocolate in the research and development process of the company is an important strength for the company.

#### **1.4.8. AMOFHIT conclusion**

Chapter 1.4 has provided an internal overview of Amazona Chocolate. Several topics were reviewed in order to have an appropriate overview of the company. In the administration and management (A) part, it was seen that Bocangel is currently leading the company. His experience and expertise are definitely a big strength to the company. The marketing and sales (M) section showed that product and promotion are strengths of the company, but price and place need to be improved since they are currently being evaluated as weaknesses. Thirdly, the operations and logistics (O) department provided an assessment of the production of Amazona Chocolate. It was seen that the external production of their goods brought strengths and weaknesses since costs are not accounted when there are not customers; however, this also limits its flexibility in case many customers show up. After that, focus was placed on the finance and accounting (F) department. This department is not very large since Amazona Chocolate is a small company, still, points for improvement were found. The company is not completely aware of its internal costs, especially the costs per unit of production. This is definitely a weakness for the firm because there is no assurance that all product lines are profitable. This issue will be more extensively discussed in the remainder of this report. Regarding the human resources (H), one of the strengths of the company lies in its training process. Staff members are up-to-date on product information and the background of the different beans that are used by Amazona Chocolate in its product lines. This allows the

company to be perfectly capable of educating the customer. Although training is costly, it brings a large benefit to the firm through the satisfaction of its customers. As for the information systems and communication (I) department, it does not bring weaknesses nor strengths since it is a very small department in the company. Lastly, the technology, research and development (T) department can be evaluated by its main characteristics. First, the Technology area did not bring much to the table, in contrast to the R&D area, that showed to be a big strength for Amazona Chocolate since both leaders, Bocangel and Lara, are extremely involved in the research community. A summary of all the specific strengths and weakness will be provided in the conclusion of this entire chapter.

### **1.5. Conclusions**

The main purpose of chapter one was to display an overview of Amazona Chocolate as well as for its internal and external environments. The first topic discussed the basics of the company, mainly Amazona Chocolate's mission, vision, values, and code of ethics. This first discussion of the company provided a good examination of what Amazona Chocolate stands for. After that, an analysis based on Porter's five forces framework was presented, in order to determine what the market and the industry, where Amazona Chocolate performs, look like. Later, a PESTE analysis was performed to evaluate in what kind of external environment Amazona Chocolate is operating. The topics discussed in this section were mainly focused on Peru, the market and the industry for chocolate and cacao. This assessment was helpful to understand the opportunities and threats that Amazona Chocolate will have to face during its operations. Last but not least, an internal evaluation of the firm was performed under an AMOFHIT analysis, which allowed to evaluate the main internal strengths and weaknesses from the company. Table 6 provides a quick summary of what has been discussed in this chapter, under a format of a SWOT diagram (D'Alessio, 2015). This diagram is especially practical and beneficial since it recognizes the pros and cons of the

organization. Also, the SWOT analysis displays the opportunities and threats that cannot be controlled by the firm but they can a source of advantage if they are helpful, or they can also be avoided if they are harmful. By doing so, it will be possible to propose guidelines that fit the best to the characteristics of the company while taking the appropriate care to maximize the opportunities and minimize the risks of the environment where the firm performs.

Table 6

*SWOT Diagram Analysis for Amazona Chocolate*

	Helpful	Harmful
	Strengths	Weaknesses
Internal Origin	Experienced leaders	Relatively high price
	Knowledgeable leaders (research)	No delivery service
	Educated employees	Dependent on factory
	High quality product	Dependent on carrier
	Organic and fair trade product	No receipts, only cash
	Flexible production process	Weak cost overview
	Opportunities	Threats
External Origin	Government support	Political stability
	Open international trade	Soil erosion and Deforestation
	Increasing chocolate consumption	Informality of labor market
	Technology improvement	Adaptiveness to technology
	More environment awareness	Social conflict

*Note.* Adapted from *Proceso Estratégico: Un enfoque de Gerencia* (3rd. ed., p. 268), by F. A. D' Alessio, 2015, Mexico D.F: Pearson Educación.

## **Chapter II: Key Problem**

Chapter II of this consulting report will focus on the research statement. It will describe the specifics of what the consultancy team is going to investigate. A company's vision and a consultancy team's vision are not always fully aligned. Chapter II will discuss the initial ideas; the reason for the report, and will conclude with what is the problem statement that the company is currently facing and desires to change. The structure will be discussed in paragraph 2.2, while paragraph 2.3 will further elaborate on it, providing a larger explanation on topics such as location, ownership, and time-span will be discussed.

### **2.1. Company's View on the Business Opportunity**

The consultancy team and the client, Amazona Chocolate, have met three times in order to discuss the assignment. In all three meetings the words 'cost', 'competition', and 'analysis' were used a lot by both the general manager, Bocangel, and the company consultant, Lares. It was clear that the assignment was going to be in the financial area. Besides the orientation on the assignment, the team used the three meetings also to get a good overview of the company and its functioning. The team has visited the office and the adjacent warehouse, two factories (of partners) in which the products were produced, and two farmer/vegan markets on which Amazona Chocolate products were sold. This has clearly expanded the minds of the consultants and has resulted in a better understanding of the assignment and areas of interest.

#### **2.1.1. From initial idea to final idea**

As discussed in the previous paragraph, it was clear to the consultants that a cost analysis had to be performed. A cost analysis in which the internal costs of the company would come to the surface and to see which costs could be allocated to which department and which product. Amazona Chocolate makes profit every year, but which product contributes most to the profit? and which department is responsible for most of the costs? These are all

questions that have no clear answer yet. Amazona Chocolate would like to get an overview of the costs. It is looking for a way to monitor it.

A cost analysis only is interesting for a company to have, but it is not sufficient. During the meetings the client and team realized that the company wants to perform a cost analysis in order to identify the weaker points in the company. It wants to know where it is losing money and how it can improve. A better insight in your costs will allow you to take measure to reduce the cost in that area or product group and create a better position for yourself in the market.

As described earlier, Amazona Chocolate is operating in a small niche market. The product is; however, increasing in popularity. More and more people want organic, fair trade, and high quality chocolate. This has led to an increase in the amount of competitors in the market. By performing a cost analysis, Amazona Chocolate is able to identify its weaker points, improve on them, and create a better position in the market. The following paragraph will describe the process of the research on how to achieve this.

## **2.2. Problem Statement and Sub-questions**

### **2.2.1. Research statement**

To clearly create a focus for the research, a main research question is very important. The previous paragraphs have discussed the problem that Amazona Chocolate would love to see solved in the near future. The identified problem can be summarized in the following research statement: what can Amazona Chocolate do to reduce its internal costs to be more efficient and more effective to eventually increase its competitiveness in the market within the next year?

The research statement has been stated in a SMART way which allows all parties to clearly see what will be achieved at the end of the report. The research will focus on the cost

analysis first, later it will identify weaker points in the company's processes based on this cost analysis. Lastly, it will come up with some recommendations on how to improve them.

### **2.2.2. Sub-questions**

In order to find an answer to the main question, the following sub-questions have been created. The research will follow this structure to eventually arrive at the final conclusion and the solution to the research statement.

- What are Amazona Chocolate's internal costs?
  - How can Amazona Chocolate's costs be identified (fixed versus variable costs)?
  - What is the best way to organize and structure these costs considering the limitations of the company regarding its resources?
  - How can the cost to search for improvement be analyzed?
- How can Amazona Chocolate use the overview of its internal cost to identify points of improvement?
  - How to be more effective?
  - How to be more efficient?
  - Which costs are the most resource demanding? Are they worth spending for the company?
- How can Amazona Chocolate implement these improvements to become more competitive in the market?
  - In what order should all points be addressed to create the best results?
- Conclusions

The set of questions mentioned in part 1 will focus on the cost analysis. The team will perform several analyses in which it will identify, organize, and analyze all costs related to the company. It will create the main overview. Part 2 will incorporate this information to see where it can identify areas for improvement. Key words in this part of the structure are



‘efficiency’ and ‘effectiveness’. This is important to take into consideration since the company is relatively small. Once points for improvement have been identified, the team will search for a way to implement the points so the company is able to realize its improvements and actually become a stronger power in the competitive market (part 3). The next paragraph will continue to elaborate on the main roots of the problem. In the same sense, it will continue to extensively discuss all the ins and outs of the problem that has been identified for Amazona Chocolate.

### **2.3. Key Problem Insights**

#### **2.3.1. Substance**

As it has been acknowledged, cacao beans are the core resource for the production of chocolate, they are actually quite expensive particularly Amazona Chocolate picks only organic and fine quality beans for processing. Amazona Chocolate produces organic chocolate that is 100% made in Peru with domestic cacao that offers from various grower cooperatives (Amazona Chocolate, 2018). Since one of the chocolate products is based on “single plantation”, it gives high bargaining power to the supplier because of the competitive advantage of its taste in the market. The potential future cost and good farm management need take into consideration for obtaining the best cacao. Besides, there are three ingredients that are essential for the refining process to obtain chocolate; they are cacao liquor, cacao butter and sugar. By grinding the nibs of cacao beans, the cacao liquor is obtained, and subsequently, the cacao butter after a pressing process of the cacao liquor. However, sugar is another substance that needs to be purchased which results in an added cost for the company. Peru is a country that does not produce organic sugar. In order to make organic chocolate, the firm imports organic sugar from Brazil which is comparatively expensive. From harvesting to the manufacturing process, there’s a price for every substance that is needed to make into final products. Achieving good price of the materials is an approach to minimize cost, but

make sure the competitiveness and high-quality is critical at the same time in order to gain more benefit in the long-run.

### **2.3.2. Location**

The target consumers of the company are locally based in Peru. Because Amazona Chocolate educates its consumers and sells products to individuals directly through farmer markets, the locations of selling are mainly in assorted farmer markets. The cost for Chocolate stands in farmer markets is weekly paid. Since the consumption of chocolate is increasing and eating healthy and organic food becomes a trend in the society as well, people start to pay more attention to food choice which brings more consumers for organic chocolate (“Promoverán consumo,” 2018 July 17). This niche market carries many potentials for the business to generate a better return. Those returned customers come back not only because of the taste of chocolate but also due to the service and brand loyalty. Being able to locate and explore those markets is important since customers need to know where they can buy the products. According to the aforementioned, it is important to recognize the ability to run the business in a manner of efficiency and profitability in those specific markets and other display locations. All the departments will be analyzed so the final result should provide an overview of all the costs of the company.

### **2.3.3 Ownership**

The cost of business and the way to manage those costs affect the production and operation of the company as a whole. It is necessary to locate the right balance between operational efficiency and business cost. Since Bocangel and Lares are the managers and main decision-makers throughout daily procedures, they are the foremost person who needs to address the key problem. Because Amazona Chocolate is still a developing company, they are exploring more opportunities and prospects to reach another level. And all those probing and tries are based on costs which certainly need to be controlled and well-managed. Both

managers would have to apply the optimal cost-effective strategy that is later proposed in order to better utilize money and reduce internal cost. Nevertheless, every worker from the production line to the selling point is also a potential owner and responsible for the key problem. The effective function of each role holds the entire business operates in a profitable and productive way. Meanwhile, enhancing the competitiveness in the market by reducing costs efficiently gives managers the ability to gain more budget and have better financial planning.

#### **2.3.4 Magnitude**

The magnitude of Amazona Chocolate's money spending would be specifically evaluated later on to address the question of profitability. The financial assessment will be based on different sectors throughout chocolate production and business management, such as administration cost which is an ongoing factor that's significantly related to the cost of business. Logistic costs for transporting or delivering items, cost for raw materials, cost for packaging, etc., all those costs add up contribute to the economic performance of company. Analyzing the expense and putting effort to focus on cost efficiency helps the company to reduce its internal cost. Greater cost efficiency serves the business by saving more money while still performing well and productive. As general manager Bocangel mentioned, there are many ant-costs revealed which those costs might seem little but with more frequency, and they could create substantial cost if you sum them up (personal communication, June, 2019). Besides, measure hidden costs like legal costs, costs for obtaining certifications to run the business, and aware of hidden costs are also very important. Overlook the costs that are happening in operation will hurt the cash flow of business. From a future perspective, investigating the magnitude of business cost and using a cost-effective method supports the business to run financially safe and sound.

### **2.3.5 Time perspective**

The participating time in producing and in investing the chocolate production definitely pays off in the long-term. The more technical knowledge and know-how that small farmers understand about cacao from sowing to harvesting through time to time, the better quality of goods and better efficiency of the production will be. The time that the research and development department spend on improving and evolving innovative products while sustaining its high-quality also is significant to maintain the company's competitive advantage and retain or expand customers. From the transportation aspect, because Amazona Chocolate buys beans then send to factories for production, those time cost during transportation need to take into account especially the traffic is quite congested in Peru. The chocolates have to wait in the truck when stuck on the crowded road, then the probability of lower quality and taste of products might occur especially during the summer season. Time cost expenditure is differentiated by the motivation of production. Having better time management in the business could help the enhancement of cost structure. A clear understanding of which parts of the business need to dedicate more time on and which part is not critical as the other one is pretty important. Time cost management is a way to improve internal cost so that the business can be more efficient and resilient to stand out in the market.

### **2.4. Conclusions**

To conclude this chapter, it can be stated that the main focus of the assignment lies in the improvement of the internal cost structure at Amazona Chocolate. This conclusion is supported by the constant communication that the consulting team maintained with the company by arranging constant meetings and even visiting the offices, facilities and plantation of Amazona Chocolate. For these reasons, the consultancy team will perform an internal cost analysis after which it will identify certain points for improvement. Key here is the emphasis on improving efficiency and effectiveness. Once these points have been

identified the team will propose certain recommendations for improvement of the process to diminish internal cost and to increase its competitiveness on the niche chocolate market that they are operating in.

Table 7

*Summary of the Problem Statement - Overview*

Question analysis	Problem formulation
Main Question	What can Amazona Chocolate do to reduce its internal costs to be more efficient and more effective to eventually increase its competitiveness in the market within the next year?
Sub-questions	<ol style="list-style-type: none"> <li>1. What are Amazona Chocolate's internal costs?</li> <li>2. How can Amazona Chocolate use the overview of its internal cost to identify points of improvement?</li> <li>3. How can Amazona Chocolate implement these improvements to become more competitive in the market?</li> <li>4. Conclusions</li> </ol>
Substance	Cacao beans are the core resource and not cheap; cacao liquor, cacao butter and sugar are three essential ingredients to obtain chocolate.
Location	Selling locations are mainly farmer markets and weekly paid.
Ownership	Bocangel and Lares are the managers and main decision makers; every worker is also responsible for the productivity and efficiency.
Magnitude	Financial assessment will be based on different sectors throughout chocolate production and business management.
Time Perspective	Time cost management to improve internal cost and understand which parts of business need to dedicate more than others (transportation time, investing in R&D, etc).

### **Chapter III: Literature Review**

This chapter will focus on reviewing the literature available for the key topics that concern the present report. The emphasis given to the literature review remains in the different cost accounting methodologies that companies apply in their daily operations. The focus is given to accounting systems as it was acknowledged in Chapter II that the company's main problem relies on monitoring its internal cost, as they desire to be more efficient and effective. Therefore, this section will present a study on this topic by researching different sources, mainly in books, academic publications, and journals.

#### **3.1. Literature Mapping**

The most relevant ideas and concepts were identified for the literature review, and they were structured in a sequence that resulted in the literature map, which is presented in Figure 11 and Figure 12. This literature map has as its main central topic the problem statement formulated for Amazona Chocolate which relates to the reduction of its internal costs to be more efficient and effective. From this point forward, the literature will elaborate on the different types of accounting, mainly management, financial and cost accounting, and the basic concepts of the latter. Then, the focus will be established on the different systems of cost accounting, mainly job costing, process costing and activity-based costing. The literature is abundant regarding the last methodology since it is a relatively modern costing system and its implementation has been quite successful in different companies; on the other hand, the literature is scarce for the other costing systems. Research is also performed for inventory costing and its two most known methodologies: variable and absorption costing. All these methodologies are explored emphasizing in their advantages, disadvantages and implementation processes, especially in small and medium enterprises (SME). Finally, a chapter about cost decision making is elaborated. This chapter is important in the literature review of the present consulting report as Amazona Chocolate has expressed its desire to

assess alternatives for restructuring its internal costs, if they help the company to be more efficient and effective.

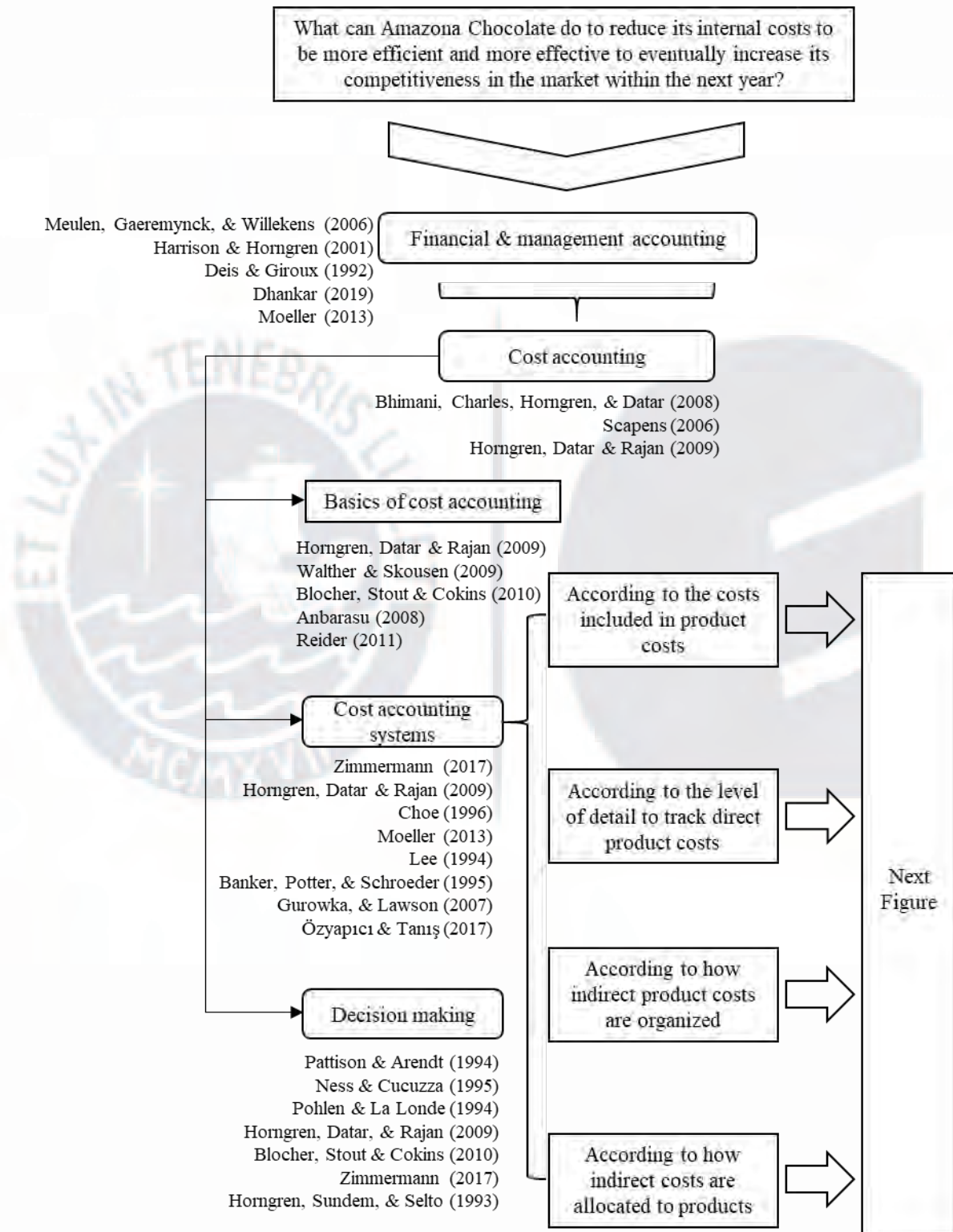


Figure 11. Literature mapping (1).

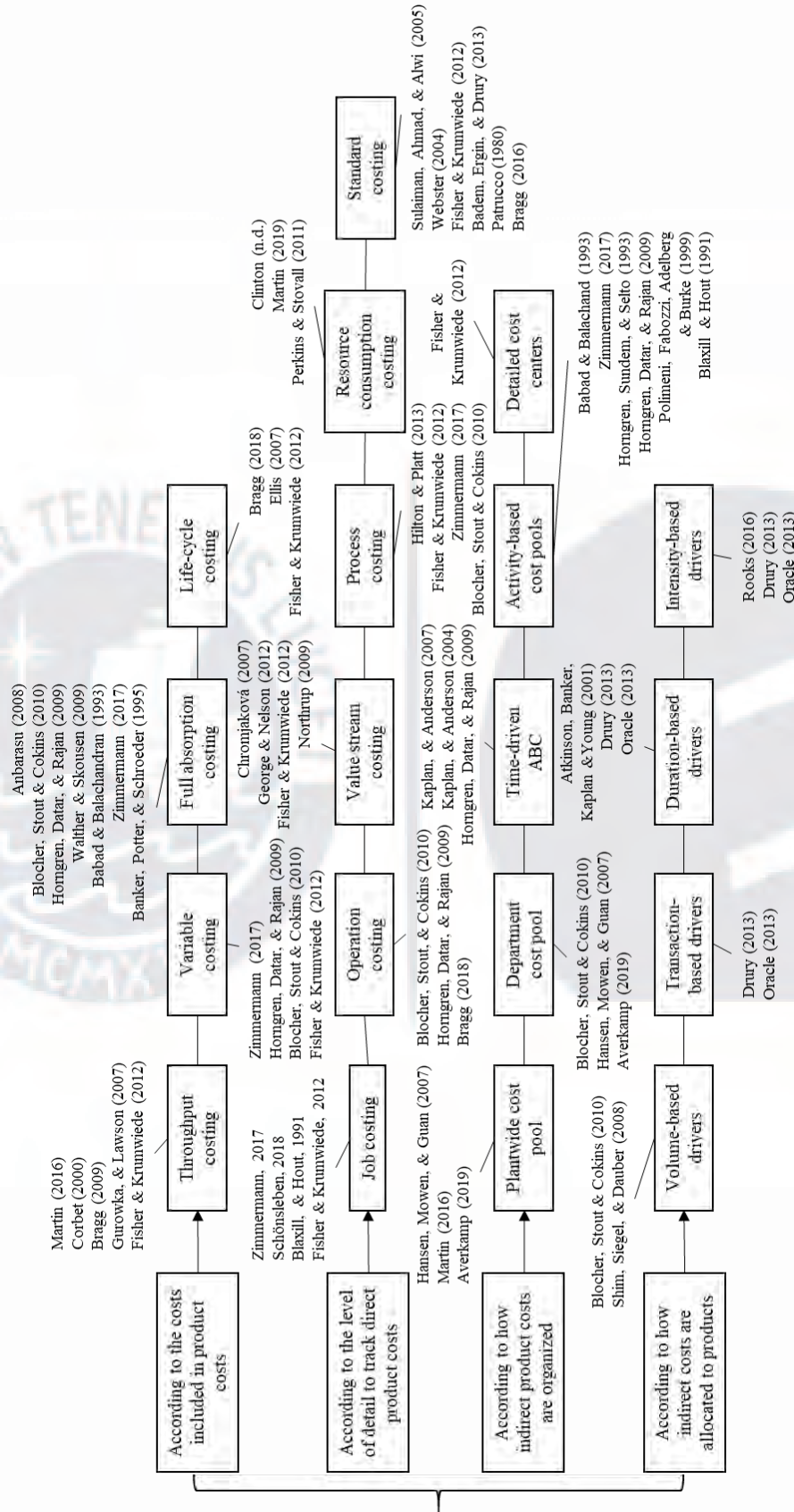


Figure 12. Literature mapping (2).



## 3.2. Literature Review

### 3.2.1. Financial, management, and cost accounting

When talking about financial legislation and change within the tasks of accounting purposes the International Financial Reporting Standards (IFRS) and the Generally Accepted Accounting Principles (GAAP) seem to be the two most appropriate milestones to be mentioned (Meulen, Gaeremynck, & Willekens, 2006). IFRS follow the idea of making accounting books accessible across continents, by having a standardized set of rules for the financial statements. Similarly, GAAP was also introduced to give investors a certain amount of “consistency” when comparing two or more firms. The GAAP also serves to the purpose of creating a common set of accounting principles (Harrison & Horngren, 2001). The difference between IFRS and GAAP is that IFRS is not that strict regarding the definition of revenue streams, for which it allows firms to report revenues earlier. Therefore, under this standard, a balance sheet could display a higher stream of revenues, which might lead to different results regarding the evaluation of the balance sheet under both methods (Meulen et al., 2006).

Concerning financial accounting and controlling purposes, Dhankar (2019, p.350) investigated that “IFRS-based financial statements have been or will be used not only for external reporting but also for internal decision-making and performance measurement processes in the parent and subsidiaries”. In order to understand the scope of cooperate accounting in practice one must first consider the roles of accounting and controlling, which can be linked to financial and managerial accounting practices respectively. Accounting is an information system that organizes business activities to produce financial statements (Income statement, Balance Sheet, Change in Equity) which provides external stakeholders an overview of the financial position and performance of the companies (Moeller, 2013; Harrison & Horngren, 2001). These financial statements have to be in line with specified

accounting standards to allow a direct and non-biased comparison between firms (Deis & Giroux, 1992).

Inversely, controlling serves as a decision making tool for internal managers in the form of forecasts, budgets, etc. These reports do not have to abide by a standardized structure, as management decisions are firm specific and require unique information combinations (Bhimani, Charles, Horngren, & Datar, 2008). According to Scapens (2006), he was told during his early days as an accountant that “there wasn’t much to do in management accounting. It was believed that the interesting work had already been done”. However, Scapens (2006) refused this statement and tried to explain why there is a much deeper sense behind controlling itself. Managerial accountants continuously have to adapt to a fast moving world and find right practices to use to meet the firm’s philosophy, as well as their procedures. Then, cost accounting can be understood as a supporting practice for both financial and management accounting since it contributes with valuable information for the decision-making of management and financial accounting through the measurement and analysis of information related to the costs of obtaining and utilizing resources in the company (Horngren, Datar, & Rajan 2009).

### **3.2.2. Basics of cost accounting**

There are many different types of costs and according to its characteristics, they receive different names, for which it might be confusing to understand the next paragraphs if they are not clearly defined beforehand. To begin with, it is important to define what cost actual refers to. According to Horngren et al. (2009), accountants define cost as a resource that is used to achieve a particular purpose and normally measured as a monetary payment performed to procure a good or service. Then, costs can also be classified based on its variability or behavior with the volume of production. On this basis, costs can be distinguished between variable and fixed costs. Variable costs will change proportionally to

the changes in activity, meaning that they are expected to increase with each additional unit of output. On the other hand, fixed costs are not affected by the volume of production, for which they do not fluctuate with changes in the level of activity. These concepts are important, especially because they are the base for understanding how economies of scale work. Based on the quantity of production, efficiency can be improved as production levels rise since fixed costs remain equal as the production increase, reducing the cost per unit of outputs (Walther & Skousen, 2009).

Then, according to the traceability of the cost, they can be classified as direct or indirect cost. A direct cost can be conveniently and economically tracked directly to a cost object (product, service, customer, activity, or organizational unit); while an indirect cost is not traceable to a cost object. For this reason, the relation to a cost object has to be done through cost allocation by establishing cost drivers, which can be defined as factors that have the impact of adjusting the amount of total cost (Blocher, Stout & Cokins, 2010). Direct and indirect costs are referred in the terms of their traceability to the products, job, process or any other segment of the business that represents the activity being costed, for this reason, they are also known as prime costs and overhead, respectively. Direct costs consist of direct materials – materials that go into the finished product, labor – directly associated with the manufacture of the finished product, and other expenses that are traced directly to the final product, while indirect costs include administrative, factory, selling, distribution overheads, and other functional costs. (Anbarasu, 2008). In the case of manufacturing businesses, costs can also be distinguished between those that are based on management and those that are based on functional activities related to the manufacturing process. This cost distinction classifies manufacturing and non-manufacturing costs due to its relation with the manufacturing activity. Within these groups, the manufacturing costs can be divided between direct materials, direct labor and manufacturing overhead; while the non-manufacturing costs

include different expenses such as selling, marketing, general and administrative (Reider, 2011).

### **3.2.3. Cost accounting systems**

The management team should know the specific production costs for each product it intends to sell, in order to make an appropriate decision concerning the product to be introduced in the market. Furthermore, one can argue that the decision to introduce a new product, and the effort to engage in marketing campaigns, as well as in-house or outsourcing trade-offs, are influenced by given cost estimates that analyze the profitability of a product (Zimmermann, 2017). Within this realm of uncertainties, the overall objective of cost accounting systems is to provide information for control and planning purposes (Choe, 1996; Moeller, 2013; Zimmermann, 2017). However, historical costs are not commonly suitable for planning objectives, additional measures to treat and allocate costs respectively results in consideration of different approaches to deal with cost allocation within companies (Lee, 1994). Hence, if the gains of improved decision-making are more significant than the costs incurred to obtain more efficient and additional information, then further measures should be included in the accounting system (Horngren et al., 2009).

Significantly, a problem that is current with cost accounting systems is that they are not effective at tracing physical activities that consume resources (Zimmermann, 2017). Accounting systems register the costs that are produced in the respective area or department of the business, but not with respect to what is producing those costs, for example, the number of purchases, inspections, part numbers, etc. One has to acknowledge that several costs in a company are not necessarily derived from the number of units produced, but could be driven from the number of transactions (Banker, Potter, & Schroeder, 1995). If the allocation of these costs is made under a unit volume, this could generate an over-assignment of costs to those products with large production volumes, even if it is not the real scenario.

Therefore, one has to distinguish between the importance of historical costs for decision making within the company. Generally, historical costs have a limited use regarding planning decisions, especially in a swiftly changing environment, as they are weak estimations of what the opportunity costs would be, as well as the rate of usage of resources (Lee, 1994).

However, these costs may be helpful for other purposes such as for controlling costs, as the information that is provided can be employed for performance standards for example (Zimmermann, 2017). Further, in industries where fixed costs are high, companies must manage capacity levels and availability of their products with a special focus on production and inventory policies. For this reason, the inventory costing aims to determine which costs are considered as inventoriable costs in order to take the correct decision regarding the production and inventory of products (Horngren et al., 2009).

In the field of management and cost accounting, it is difficult to define what is the best methodology to provide the best decision-making information. In contrast, the different costing tools should be used for business issues and environments that are different, based on the characteristics and necessities of the firms (Gurowka, & Lawson, 2007). In addition to this, Özyapıcı & Tanış, (2017) argue that the success of a company is closely related to the cost system that is used by them since the decision-making process is primarily based on the information obtained through these costing tools. However, the requirements for cost information will depend on the characteristics of the organization, as well as for the capabilities and resources of the firm. For this reason, it is necessary to provide the best information possible but at a reasonable cost (Gurowka, & Lawson, 2007).

To do so, Gurowka & Lawson (2007) recommend to review the environment of the company by assessing the current issues that the organization face, the competitive landscape, management style, technology platforms, desired outcomes from a new costing system, available resources, and an evaluation of the current costing system. Then, a review of the

needs and abilities of the organization to implement change is required. This evaluation requires to look to the size, diversity, IT environment, management sophistication, decision-making concentration, and all of the departments in function of the firm. Later, it is important to list the major requirements for a new costing system that the company desires and/or needs. They should be ranked from highest to lowest in priority of importance. By understanding which are the most important requirements of the organization, it is possible to choose the tool that will meet the most of those requests. Gurowka, & Lawson (2007) provide an overview of some of the most used and known cost methodologies, which are displayed in Table 8. The following paragraphs will focus on reviewing these costing tools, putting more emphasis and depth in the ones that are more traditional as they might be more suitable for a small and young company like Amazona Chocolate.

***Throughput costing.*** The approach requires to trace the most limited quantity of costs to the inventory, for which it treats all costs, with the exception of direct materials and labor, as either operating expenses or period costs. Therefore, the method is not accepted for external reporting (Martin, 2016a). This costing methodology is based on the theory of constraints and uses three performance measures: throughput, inventory and operational expenses to support the decision-making process of a company, and at the same time, manage its financial and accounting systems (Gurowka, & Lawson, 2007). Throughput is defined as the rate at which the system generates money through sales; inventory as the money invested by the system in order to put a product for sale; and operational expenses is the money spent in order to convert the inventory into throughput (Corbett, 2000). Finally, the model inhibits inventory buildup as fixed costs are not realized into the inventory, for which its use is mainly in just-in-time production environments. Further, as it does not measure full costs, it is not considered to be appropriate for making strategic decisions (Fisher & Krumwiede, 2012).

Table 8

*Costing Tools and Methodologies Definitions*

Costing tool methodologies	Definition
Standard costing	A product cost system that uses standard costs rather than actual costs. It may be based on either absorption or direct costing principles, and may apply either to all cost elements or to some of them.
Activity-based costing (ABC)	A system that (a) identifies the causal relationship between the incurrence of cost and activities, (b) determines the underlying “driver” of the activities, (c) establishes cost pools related to individual “drivers,” (d) develops costing rates, and (e) applies costs to cost objects on the basis of resources consumed (drivers).
Grenzplankostenrechnung (GPK)	A German cost accounting, flexible cost planning, and control system that focuses on resource consumption and integrates measurement and management of an organization into an accounting system.
Resource consumption accounting (RCA)	A management accounting system based on German and American cost management principles. RCA establishes a comprehensive and fully integrated management accounting system.
Lean accounting	The application of lean principles to accounting processes to eliminate waste embedded in transaction processing, reports, and accounting methods.
Throughput accounting	Based on the Theory of Constraints, this methodology uses the three basic measurements of throughput, inventory, and operating expense to manage the financial/accounting aspects of an organization and its decision making.
Target costing	Cost calculated as result of subtracting the desired profit margin from an estimated or a competitive-based price to arrive at a desired production, engineering, or marketing cost. This may not be the initial production cost, but one that is expected to be achieved during the mature production stage.
Life-cycle costing	The accumulation of costs for activities that occur over the entire life cycle of a product, from inception to abandonment by the consumer. It is a measure of the total costs over the product’s life, including design and development, acquisition, operation, maintenance, and service. Service costs include marketing, distribution, administration, and after-sales service costs.
Economic profit	A measure of the profitability of an entity, equal to net income less the cost of capital employed.
Process costing	A method of cost accounting that first collects costs by cost centers and then allocates the total costs of each cost center equally to each unit flowing through it during an accounting period.
Cost/volume profit (CVP) analysis	An analysis of the relationship of cost and revenue. It characteristically emphasizes both the volume at which there is neither profit nor loss and the influence of fixed and variable factors on the profit expectations at various levels of operation.
Absorption costing	A method of costing that assigns all or a portion of the manufacturing costs to products or other cost objects. Costs include both those that vary with the level of activity performed and those that do not vary with the level of activity performed.
Normal costing	The process whereby cost objects are assigned the sum of direct materials and labor resources consumed plus an allocation of overhead based on normal capacity.
Variable costing	A type of product costing in which the cost assigned to a product includes only the cost of inputs that vary directly with the number of units produced and that are used in the production of the unit.

*Note.* Retrieved from “Selecting the right costing tool for your business needs,” by J. Gurowka & R. A. Lawson, 2007, *Journal of Corporate Accounting & Finance*, pp.21-27.

The advantage of throughput costing is that for the short-term planning, this approach helps managers to make production decision and generate profits. When the business operation is in a situation of bottleneck, it also helps to tighten cost-control on spending. On the other side, this could also cause postponement of products that should be delivered to customers in time due to production mismanagement (Bragg, 2009). However, the criticisms of throughput also aim to its short-term focus. Corbett (2000) indicated that by addressing three questions, this costing methodology can also be used from a long-term profitability focus. The questions are (a) how much money is generated by the company? (b) how much money is captured by the company, and (c) how much money is there to operate the company?

**Variable costing.** Variable costing, which is sometimes known as direct costing is a cost allocation method that treats all fixed costs as a written off against income in the occurring year. Thus, fixed costs are not considered into the product costs, for which they don't pass to inventory (Zimmermann, 2017). In this methodology, the variable direct and indirect manufacturing costs are considered into the inventoriable costs. Only variable costs are used to determine the costs of sales and the contribution margin (Blocher et al., 2010). Variable non-manufacturing costs are considered as period costs, while variable manufacturing costs are inventoried and fixed manufacturing costs are also considered as period costs (Horngren et al., 2009). Therefore, the Variable Costing approach provides means that help a company to improve its decision making in terms of an alteration of the general operating profit (OP) calculation. Traditionally, and most commonly according to IFRS standards, Sales (S) are subtracted by Cost of Goods Sold (COGS), thus estimating the Gross Profit (GP) of the company, which then is subtracted by Expenses (E) leading to OP.

However, a few changes to the formula, through the means of the variable costing approach, enables the company to estimate the Contribution Margin (CM) of its respective



products. It is done by a division of COGS, as well as Expenses (E), in parts that can be directly traced to and be related to products, which can then be regarded as Total Variable Standard (TVS). This leaves the fixed costs of a company, which now can be regarded as Total Fixed Standard (TFS), representing all other costs that are treated as fixed and cannot be directly related and traced to the products (for a distinction please refer to Basics of Cost Accounting of the literature review). Hence, the Operating Profit (OP) is calculated based on Sales (S) subtracted by the Total Variable Standard (TVS), which yields the Contribution Margin (CM). The Contribution Margin is then subtracted by the Total Fixed Standard (TFS), which leads to the Operating Profit (OP) of the firm. The calculation can be summarized as follows:  $S - TVS = CM$  ;  $CM - TFS = OP$ . The fundamental difference is that based on this alteration of calculation of the Operating Profit the company has the ability to evaluate how much each product is contributing towards the fixed costs using quantities available from its sales data. Therefore, using a cost-volume profit analysis helps identifying whether or when a product is profitable using the simple concepts of fixed and variable costs, providing decision makers with strategic information to assess impact of products to the company's success based on quantities traceable costs and thus the contribution margin (for more detailed information of this analysis, please refer to point 3.2.4. decision making from Chapter III).

The advantage of this costing method is that it fulfills the objectives of management control systems since it separates the costs by each profit center, allowing to show the costs that can be tracked and controlled (Blocher et al., 2010). Variable costing is more suitable when variable costs are meaningful and a key component of the total cost. In addition, this methodology can control the accumulation of inventories since fixed production costs are charged in expenses instead of being considered in the inventory. Finally, the variable cost allows focusing on the contribution margin of the products by separating the fixed costs from the variables. This approach is relevant for short-term strategic decision making since fixed

overhead costs do not change significantly in short-term production (Fisher & Krumwiede, 2012).

In contrast with absorption costing, the variable costing methodology does not consider the fixed manufacturing costs as part of the costs of the product. This difference might lead to discrepancy in perceptions regarding the efficiency in the manufacturing area of the company. Since variable costing does not consider the fixed manufacturing costs as an inventoried cost, but as a cost of the period, then the results of operating income is lower than in the absorption costing methodology. This means that if the inventory increases over a period, a lower operating income will be reported if the variable cost is used instead of the absorption cost methodology. Another important characteristic of variable costing is that, under a constant contribution margin per unit and constant fixed costs, the change from one period to another in operating income is only due to changes in the number of units sold, which means that an increased production for inventory will not affect operating income. On the other hand, under absorption costing, operating income is positively affected by an increase in the unit levels of sales and by a higher production of units (Horngren et al., 2009).

**Absorption costing.** Absorption costing is a particular type of cost allocation that traces all manufacturing costs directly to the product or cost object. Anbarasu (2008) indicated that products are charged with the total costs, both fixed and variables, for which it is considered to have a limited application nowadays. However, it is still often used in financial reporting for determining the cost of goods manufactured and the book value of inventory (Blocher et al., 2010). Under this method, the total cost would be allocated to a product, including those that cannot be easily identified, which means that all variable and fixed manufacturing costs are included. The overhead costs are distributed among all the output units, the inventory output "absorbs" the total cost of the production process. (Horngren et al., 2009; Walther & Skousen, 2009).

According to Walther and Skousen (2009), absorption costing is required for external reporting under general accounting principles. For this reason, many firms prefer to adopt this costing system in their internal accounting, as it is cost-effective and reduce confusion among the firm. Horngren et al. (2009) added that many companies use inventory cost information for long-term decisions (e.g. pricing or choosing product mix). For this reason, inventory costs should consider variable and fixed costs, as proposed by absorption costing. However, as noted in the previous paragraph, this methodology enables managers to increase operating income for a specific period by increasing production, although there is no real demand for the products. This could distort the actual performance of the firm, in favor of other interests. Horngren et al. (2009) recognized that companies can be benefited by the use of both methodologies: variable costing for short-run decisions and performance evaluation, and absorption costing for long-run decisions.

Notwithstanding, one of the issues with absorption costing is that given variable costs stay constant, average costs tend to fall when production increases (Babad & Balachandran, 1993). As a result, managers can increase profits by overproducing (Zimmermann, 2017). Another criticism of absorption costing is that it can produce misleading unit costs. This method usually allocates fixed costs on the basis of direct labour or direct materials (Babad & Balachandran, 1993).

However, the allocation base must have a cause-and-effect relationship with the overhead costs to function correctly. For instance, distinctive machine setups for particular products would, in fact, need a different allocation basis. Hence, many accounting systems neglect to accurately keep track of costs because they do track the physical activities that consume resources and cause these costs. As mentioned, absorption costing does not keep track of the amount of machine setups that are needed to produce the distinct products in a company, or on a production line (e.g. different kinds of chocolate that require cleaning and

switching of parts in the manufacturing process). Accordingly, inaccurate product costs are referred to as overhead costs that are not properly traced to the activities that are the cause of the costs (Banker et al., 1995). Instead, these costs are aggregated with other cost pools and assigned through the use of an allocation base that is not related to the cause of the cost.

***Life-cycle costing.*** The process of this costing method consists in compiling all the costs that the firm will have to incur over the lifespan of an asset or product. It is a costing methodology that is primarily used by companies that have an emphasis on long-term planning, as they look to maximize their profits in a time span of many years. In this sense, the organizations that do not use the life-cycle approach, acquire assets for the lowest immediate cost, but do not pay attention to the costs that will be incurred in their useful lives (Bragg, 2018a April 7). For this reason, life-cycle costing, also known as LCC, is mainly used to evaluate assets, by considering all costs that arise from its owning, operating, maintaining and disposing; and then compare the best value per resources spent based on discount rates that consider the value of time of the asset (Ellis, 2007). The main purposes of LLC analysis can be established to be choosing between different options of assets for purchasing decisions; determining the asset's benefits by analyzing the return on investment; and creating accurate budgets by not underestimating the costs of the business (Ellis, 2007). In summary, life-cycle costing considers all costs, including production related and non-related costs such as sales, administration, R&D, customer service, and disposal costs, which might be referred as "upstream" and "downstream costs that are part of the value chain of a product, which are being increasingly recognized as strategic for long term decision planning (Fisher & Krumwiede, 2012).

***Job costing.*** It is considered to be one type of absorption costing and it is frequently used in departments that produce different jobs or batches (e.g. job shops and batch manufacturing) (Zimmermann, 2017). In job costing, the company collects information on all

direct materials and labor used for the jobs (Schönsleben, 2018). Furthermore, the company adds the overhead rate times the number of machine hours. The sum of these costs is divided by the total number of units in that job or batch to get the average unit cost. In general, the overhead rate is established at the beginning of the year and is equal to the total expected overhead divided by the total expected machine hours (Schönsleben, 2018).

Nevertheless, with the estimation of absorption costing, one problem emerges. Due to an establishment of the overhead rate at the beginning of the year, companies will most likely face over or under absorption at the end of the year, resulting in differences of efficiency (Blaxill, & Hout, 1991; Fisher & Krumwiede, 2012). Establishing overhead rates provides managers with some discretion in product costing and income determination. Also, according to Blaxill & Hout, (1991) the advantage of building overhead rates at the beginning of the year is that you have access to data during the entire year, instead of waiting until the end of the year. Volume is always measured in input volume (e.g. machine hours), instead of output volume such as units produced. Firms usually select the input volume that has the most substantial cause-and-effect relationship with the overhead. The ideal use of an overhead rate is that it provides a proxy to the opportunity cost of using one more unit of the allocation base (Schönsleben, 2018). Of course, then the overhead absorbed is equal to the overhead rate times the actual input volume. Accordingly, over or under absorption of overhead can be calculated by subtracting the overhead absorbed from the actual overhead incurred.

Companies can use either one overhead rate for the entire company or multiple rates for different overhead cost items. For example, companies can calculate a separate rate for indirect labor, utilities and other overhead costs. In such a situation, each category has a specific allocation base. A third method is to allocate overhead costs by grouping them by departments (Fisher & Krumwiede, 2012). In such a case, each department uses its allocation base. For example, machining may use machine hours, while assembly uses direct labor

dollars. Plant-wide overhead rates are usually used when companies have a single homogenous production process. In general, this method is less accurate than other methods. However, if historical costs form a large part of the overhead costs, using multiple rates is equally ineffective. Using various rates is generally more accurate, but has the disadvantage that each cost base must be identified separately, which can be very time-consuming. Although all methods try to approximate the opportunity costs of making products, no technique can accurately measure the opportunity costs.

**Operation costing.** This is a system that uses the method of job costing and process costing in order to assess the operation cost of daily business production. The approach is suitable for more complicated manufacturing process, such as when production systems share custom-order manufacturing or mass-production manufacturing (Horngren et al., 2009). As a hybrid-costing system, two circumstances that involved with this costing-method are: using a common process that produces a group of products to finish a product that requires various raw materials; using more product-specific process to finish one product that produces from an identical process for a group of products (Bragg, 2018b April 7). Because all batches of products are similar but not identical, one batch might not go through the same operation as others since each batch is different and always is a variation of one single design. Even though each batch continues with a sequence of operations that have same operation resources (Horngren et al., 2009). As every work order adds up to the product costs, in job costing, each work order is specifically identified by its relevant direct materials. And in process costing, conversion costs that are incurred should apply to each unit equally during the time period of operation, due to the conversion activities are normally the same among the product lines in manufacturing operations. They are different than those direct material costs that reveal great difference in operation costing of assorted products. However, the conversion costs of direct labor and factory overhead need to be collected and allocated to the

products. For direct material costs, they directly are traced to jobs instead of traced to departments then to the jobs like the conversion costs (Blocher et al., 2010). Operation system is very useful for managers who want to concentrate on the physical processes (Horngren et al., 2009). It helps them to manage the cost and control the operation process for certain production procedure.

**Value stream costing.** Value Stream costing is a method that recognizes different aspects of characteristics along the company's value stream and use all the information to monitor and optimize the production flows and costs (Chromjaková, 2007). It's not only monitoring the costs that are happened during the actual value stream process but also about the future value stream which assesses after the optimization. This approach assists company to define the value-added of process in every step and what's the cost of those steps. It utilizes activity- based process modeling for gathering data about cost and time. With effective management and practice of this method, it allows different departments in a business acknowledge about the following four points: measure the capacity and utilization of resources, understand the costs that bring value to customers, identify process bottlenecks, build hypothetical scenarios based on changes in market volumes and demographics (George & Nelson, 2012). According to Fisher & Krumwiede (2012), value stream costing is usually associated with the Lean Accounting philosophy and throughput costing. While individual jobs or processes costs are not included in value stream costing as working with a lean manufacturing strategy, employing such method when common resources are used is somewhat challenging. However, with lean thinking through concentrating and putting effort to bring value to customers, value stream mapping is one of the key components (Northrup, 2009 March). This mapping step helps to eliminate abundant steps and recognizes those essential value and costs along the business process line.

**Process costing.** More prominent companies or plants use Process Costing with continuous processes without a clear distinction between the batches (e.g. constant flow and assembly processes) (Hilton & Platt, 2013; Fisher & Krumwiede, 2012). Costs are assigned to production processes before being allocated to the final products. The central problem in costing is to assign those costs that cannot be tracked straight to a product. Process costing allocates the average costs of all cost systems on products, differently from job costing where costs are calculated in separate jobs, and all units in the job are expected to hold the average amount of direct materials and labor (Zimmermann, 2017). Therefore, the process costing is much easier to execute than the job costing since it only has one job as a means of allocation (Hilton & Platt, 2019). Hence, with the method of process costing, the costs are assigned to identical products that undergo multiple stages of manufacturing processes. In general, these processes are all treated as separate cost centers.

Although process costing is much easier and less costly, the information is usually less useful. This is because there is no information about multiple jobs and therefore, management cannot evaluate the price trends appropriately (Fisher & Krumwiede, 2012). Process costing is an extreme case of averaging. It is job order costing with one job. Since the production process is a continuous flow of operation, discrete jobs do not exist. In process costing, costs are allocated to identical products that undergo a series of manufacturing processes in a continuous flow. For this reason, process costing is naturally easier and less expensive to maintain than job order costing because one does not have to account for separate jobs (Blocher et al., 2010). On the other hand, the information provided is far more aggregate and often less useful for decision making.

**Resource consumption costing.** This is a system that normally used by big dynamic and complex companies which focuses more on identify resources instead of the cost objects. When a company is not utilizing its resources well and results in waste, or insufficient



information to make outsourcing decisions and inefficiency cost planning on resources, then resource consumption accounting method should come into play (Clinton, n.d.). The approach takes emphasis on production cost and resource costs that are used to stimulate capacity analysis. It helps to achieve better efficiency and performance by managing the important resources for production. Before the production, the system requires company to look for the needed resources in order to achieve the goal that sets at the beginning, such as the desired level of profit and works (Martin, 2019). Resource consumption accounting is somewhat complicate because of one cost assignment process can be engaged with several different cost driver rate. Therefore, technology is used intensively for easing the complication and difficulties, for example the ERP systems that's used for implementing sufficiently (Perkins & Stovall, 2011). This model puts effort to differentiate costs between fixed and proportional in terms of resource consumption. Because proportional costs might change to fixed from time to time due to various situations. Hence, this approach is applicable for those managers who want to plan and control processes based on the cost behavior information (Perkins & Stovall, 2011).

***Standard costing.*** It is the most traditional cost system used largely in numerous companies worldwide, both in developing and developed countries. However, there is a current discussion regarding its application in today's manufacturing environment due to the highly global and competitive world (Sulaiman, Ahmad, & Alwi, 2005). Standard costing can be supported by other costing methodologies since its main purpose is to have a standard cost per product that can be analyzed based on its price and quantity (Webster, 2004). Fisher and Krumwiede (2012) indicated that standard costing may be based on either absorption or variable costing. The standard cost methodology has as main objective to provide information related to cost control; However, it is also useful for other management activities such as budgeting and product pricing (Badem, Ergin, & Drury, 2013). The methodology is used for

different purposes. Although its application is mainly focused on production industries, especially in those where products are similar and permanently produced, it has also been used in service industries and nonprofit organizations (Badem et al., 2013).

The procedure consists of charging production costs to cost objects that have been compared with certain costs and quantities. The standard costs are then compared to actual costs incurred over a certain period of time. The difference between the planned and actual results is marked as favorable or unfavorable according to the variation between them, to be later evaluated in terms of price or quantity. (Webster, 2004). In the standard cost system, the costs of the products are calculated a priori, meaning that a cost estimate is performed before its manufacturing. This estimate is then evaluated through an analysis of deviations; from which it will be decided whether the standard prices or quantities should be modified to fit the actual ones. On the other hand, the decisions that are taken can focus on readjusting the actual prices or quantities for the following periods, to make them be closer to the standard costs (Patrucco, 1980).

Among the disadvantages of implementing the standard costing methodology, it can be mentioned that it is mainly driven by experience; basically what has been done in the past, assuming that those events will similarly be replicated in the future. These assumptions could lead to risky and inaccurate budgeting for the company (Webster, 2004). In addition, due to an excessive emphasis on the importance of direct labor and the delay in feedback reports (Badem et al., 2013). Further, standard costing's focus on cost minimization might cloud the concerns on other important activities such as product quality or customer service (Webster, 2004). On the other hand, the main advantage of standard costing is its flexibility to be used in different tasks. For example, it is useful for budget, inventory costing, overhead application and price formulation. For budgeting purposes, standard costing is helpful since it allows to compare it to the actual results of later periods. Then, it is easier to obtain an

inventory costing report by multiplying the standard cost per the period-end inventory balances; although the result might not match the actual cost of inventory, it is a good approximation that helps greatly in the decision making process. Again, as a simplified way to obtain overhead costs, a standard overhead rate can be used instead, which can be updated every certain period to keep the costs close to the actual ones. Finally, if dealing with custom products, the standard cost can be used to project the cost of the customer's requirements, after which would be only necessary to add up the margin (Bragg, 2009).

***Plantwide cost pool.*** The plantwide cost pool approach uses a two-stage cost assignment. In the first one, all the overhead costs are accumulated to a single cost pool, then the plantwide rate is calculated under a single unit-level driver (e.g. direct labor hours). Finally, the second stage of cost assignment is performed by multiplying the unit driver used by each product by the plantwide rate, thus the products are charged with the overhead costs. (Hansen, Mowen, & Guan, 2007). In this sense, it is assumed that the plant is run by a single department and no distinction is found between service and producing areas. For this reason, this cost pool approach is applicable if the products are similar and consume all indirect resources in the same proportions (Martin, 2016b). Averkamp (2019a) indicated that using a plantwide rate is logical when the firm manufactures products that are similar or when there is one root cause of the indirect production costs. However, if the firm manufactures products that are different or whose characteristics are differentiated, then a plantwide will not be appropriate.

***Department cost pool.*** The department cost pool is an improvement of the plantwide cost pool approach since it takes into account the differences in costs and in consumption that are incurred by the products in the departments of a company. This approach recognizes that a manufacturing operation possess production and service departments, which leads to estimate more accurately the product costs. (Blocher et al., 2010). In this regard,

manufacturers are likely to produce more than one product, thus using different processes associated with different costs. For this reason, having multiple departmental overhead rates will reflect more adequately the manufacturing costs of different products, in contrast to the use of a general rate for the entire plant (Averkamp, 2019b). The functioning of this approach starts by assigning the overhead costs to the production departments using direct tracing, driver tracing or allocation. Then, unit-level drivers (e.g. direct labor hours, machine hours, etc.) are used to obtain overhead rates for each department. In a second stage, any product that passes through the departments is charged with overhead costs proportionally to the unit-level driver of the department. To do so, the departmental rates are multiplied by the amount of the driver that the products use (Hansen, et al., 2007).

***Time-driven ABC.*** Kaplan & Anderson (2007) indicated that time-driven ABC (TDABC) has superior characteristics than the conventional ABC model; it is found to be more powerful, cheaper and easier to implement. Under TDABC, there is no need to allocate resource cost to activities by interviewing employees. Also, in the traditional ABC approach, the resource cost would be assigned first to activities and later to the cost objects; however, with TDABC the resource costs are directly allocated to the cost objects. The approach involves three steps: (a) estimate cost per time unit of capacity by reviewing past activity levels or approximating; (b) estimate the unit times of the activities, meaning that it must be determined the time it takes to perform each type of activity; and (c) determine the cost-driver rates as the capacity cost rate times the capacity consumption rate (Kaplan & Anderson, 2004). This approach assigns directly the cost of resources to the cost objects by identifying a cost per unit for the supply of the resource. To do so, time-driven ABC calculates the total cost of supplying the resource and then divides it by the available capacity to calculate the capacity cost rate. Finally, the rate is used to allocate the resource cost to the cost object by estimating the time required by the cost object (Horngren et al., 2009).

**Activity-based-cost pools (ABC).** One modification to absorption costing that can lead to more accurate product costs is activity-based costing (Babad & Balachandran, 1993; Zimmermann, 2017). This requires the identification and management of the essential drivers that cause the costs. Furthermore, one general characteristic of the ABC-system is that it acknowledges that overhead costs vary with both, volume and the range of items manufactured.

Horngrén, Sundem, & Selto (1993) stated that normally, the function for the total cost is equal to:  $TC = VC \cdot Q + FC$ . However, as one uses the activity-based costing system, the function becomes:  $TC = VC \cdot Q + BC \cdot B + PC \cdot L = OC$ . The function changes since we now need to take into account more different categories that come along with the ABC-Costing method.

Where:

TC = Total cost; VC = Variable cost; Q = Quantity produced; FC = Fixed costs;  
BC = Batch costs; #B = Batch; PC = Production costs; #L = Line; OC = Over costs

Installing an activity-based cost system begins with an analysis of the types of transaction, or activities, which are repeated jobs performed by each activity center within an organization. Costs are first traced to these activity centers before they are traced back to the products. The first step towards ABC is identifying the sorts of transactions that produce the costs in each supporting department. Zimmermann (2017) proposed four different categories to classify cost drivers, which are listed as follows:

- Unit-level costs: These are costs that arise from activities performed by each unit at least once.
- Batch-level costs: These costs occur from operations that are conducted at least once for every batch or lot of products. Examples include moving batches, setting up machines or cleaning machines.

- Product-level costs: These costs stand from activities that assist the production of each type or model of the product. Examples include design costs, packaging costs (if unique to that product) or product enhancement.
- Capacity-sustaining costs: These costs result from the remaining activities necessary to sustain the production. Examples include plant security, administration, insurance and property taxes.
- Unit costs can directly be traced to the product. Batch-level costs should first be traced to a batch, before assigning them to individual units. Product-level costs can be allocated using the amount of parts in a product. These costs can then be traced to individual units depending on the amount of parts used per unit. Capacity-sustaining costs should first be allocated to product-level, batch-level and unit-level costs.

There are several reasons why companies tend to use ABC instead of traditional costing. Although one has to admit that in most cases, of using both methods, the difference between the results from ABC and traditional costing will not be very large, however, in a situation with either high- or low-volume products, ABC costing will lead to significantly different results. Therefore, low-volume products will most likely be understated, whereas high-volume products will probably be overstated in absorption costing. This factor needs to be considered in evaluating the appropriate cost analysis tool for Amazona Chocolate.

Notwithstanding the pooling of costs by activities provides information that could enhance the information flow for managers to help them better understand, plan and control the costs (Babad & Balachandran, 1993). ABC recognizes that costs do not only vary per unit but also per batch or product line. Therefore, it is useful in measuring product costs to be obtained more accurately and lead to more precise decisions pricing made because the relative profitability of the products can be understood more coherently because of the cost drivers (Polimeni, Fabozzi, Adelberg, & Burke, 1999).

However, ABC also makes assumptions that reduce its accuracy, as it assumes that each batch costs the same, regardless of the products in the batch or the number of units in the batch. Furthermore, ABC also assumes that the costs for each product line are the same, regardless of the complexity of a specific product line

Nevertheless, ABC systems can provide many advantages when the production is not homogeneous. It is recommended to evaluate how different would the costs of the products be under the ABC methodology and the costs that are currently calculated. Even if there is a dramatic change in the costs of products under the ABC-costing methodology, one will have to keep in mind the organizational effects, whether they are positive or negative for the company, concerning the performance assessment of the costs. In particular, which products will be the winners and losers within Amazona Chocolate and how would this affect further relationships and engagements with the different producers.

Although ABC systems enhance the precision of product costs for better decision-making, the system is much costlier to install and sustain than other costing systems, such as absorption and variable costing. The main benefit of ABC is the improved accuracy of product costs. However, the increased efficiency comes at a cost, because the company must measure all the additional cost drivers. The optimal number of cost drivers depends on the trade-off between accuracy and decision control. Finally, ABC does not allocate opportunity costs but accounting costs. If the latter is a good approximation of the opportunity costs, ABC can improve decision making. If this is not the case, it can misstate the costs as much as in traditional costing.

Furthermore, ABC also doesn't measure the benefits of producing and selling multiple products at one plant. Hence, an ABC system is not able to capture the mutual benefits of having various products, such as economies of scale or one-stop shopping. Finally, ABC focuses on costs and not solely benefits. Even if the system could accurately

identify the benefits of having multiple products, it would still distort the relative profitability of the products. Then again, overhead is not only about cost but also about the process (Blaxill & Hout 1991). One of the obstacles to adopting ABC is that it requires to build management's thinking and awareness of cost drivers and their ability to make a correct judgmental decision.

Within the company, interviews must be conducted, or employee must directly observe the on activities. Notwithstanding, this requires an immense amount of resources, hence it is very costly and time-consuming. Furthermore, the data must be updated frequently. Due to the high costs, most companies neglect this, as ABC systems can get very complicated in the long run.

Generally, one has to evaluate ABC systems according to the following criteria where they have little use in the following situations:

- Situations with less common costs.
- When a high fraction of total costs is directly traceable to the products.
- When cost centers are designed around product-lines rather than functions.
- When fixed overhead is only a small fraction of total costs.
- When firms face little competition.

***Detailed cost centers.*** The use of detailed cost centers is the most complicated approach to arrange indirect costs. The aim is to track the costs at a singular cost center level by establishing different and several categories (e.g. variable, fixed costs, supplies, labor, etc.), which are then directly directed to the cost center, to be later loaded to the product employing a variable cost rate. The level of complexity and disaggregation of the detailed cost center allows providing more prominent precision; however, at the expense of high implementation and maintenance costs (Fisher & Krumwiede, 2012).



**Volume-based drivers.** These cost drivers are aggregations of activities based on the volume of use of the resources used in making the product. Volume-based drivers rely on the premise that each product employs the same amount of overhead, as products are charged the same amount (Blocher et al., 2010). Using volume-based drivers to allocate costs to non-volume related overhead created a distortion in the cost of the product. Also, the use of only volume-based drivers can lead to one product subsidizing another, which can negatively affect the price and competitiveness of other groups of product in the company (Shim, Siegel, & Dauber, 2008).

**Transaction-based drivers.** Transaction drivers calculate the occurrence of the activity as the number of times, for example, the number of orders processed, shipped, the number of items inspected, the number of purchases processed, the configurations made, etc. (Drury, 2013). They are not expensive to implement, however, they could not be completely accurate since they expect that activities consume the same amount of resources every time they are executed. For this reason, these controllers are accurate and useful when activities require the same or similar amount of time and resources (Oracle, 2013 June).

**Duration-based drivers.** Duration-based drivers analyze the time that was spent into an activity. It is measured either by minutes or hours per unit of each of the products and they can be established as ordering hours, engineering hours, machine hours (Atkinson, Banker, Kaplan, & Young, 2001). It is most useful to apply when activities are similar but take different time to perform. For example, products whose line of production require to set-up; however, one of the lines of production takes a shorter time to be ready than the other. If a duration-based driver is not considered, then the most likely driver to be used would be the number of set-ups; however, this would lead to an underestimation of cost for one product and an overestimation of cost for the other (Drury, 2013). These drivers are expensive to set up due to the time estimates required for each activity, for which is better to use the driver

when a significant variation exists in the amount of activity required for the products (Oracle, 2013 June).

***Intensity-based drivers.*** These drivers have the major level of complexity among the other alternatives, but they are also more suitable for complicated situations, as they reflect how difficult it is to “do something”. They take into account this complexity by considering a factor that is multiplied by the driver quantity. In this way the final driver quantity is obtained and ready to be used for cost calculations. (Rooks, 2016 November 22). The intensity drivers directly load the resources used an activity each time it is executed to obtain a product. For example, if an activity required of labor to perform an activity, then the intensity-based driver would record the actual, also could be an estimation, of the time for each type of labor (e.g. skilled, unskilled) and the resources that were used by them would be directly assigned to the product (Drury, 2013). As indicated before, intensity drivers use a combination of measurements to charge the resources used directly to a product, this makes it to be the most expensive drive to implement, for which they should be implemented when the resources associated to the activity are also expensive and variable (Oracle, 2013 June).

#### **3.2.4. Decision making**

According to Pattison and Arendt (1994), a cost accounting system is not fully exploited if it is only used for cost controlling, instead, it should be built with the aim to measure performance and satisfy the requirements and demands of the users. Similarly, Ness and Cucuzza (1995) indicated that many companies used costing accounting methods in order to decide in keeping or cutting customers or products as a onetime profitability study; however, they can serve as strong tools to ceaselessly rethink and develop better products, process, market strategies, etc. In that sense, cost accounting systems can improve the management and control of overhead costs within an organization since they increase the visibility of how products, customers, or supply channels consume work and resources. Then,

managers can take decisions to improve the efficiency of activities by discarding unnecessary activities, replacing a costly activity for a cheaper one, using a unique activity to achieve multiple objectives and functions, or decreasing the number of times the activity has to be executed (Pohlen & La Londe, 1994). In such sense, the company increase the accuracy of tracing costs and define the areas that generate the greatest profit or loss by performing a profitability analysis. The decisions taken from this point can focus on techniques such as repricing, buying minimum or the optimal quantities, charging by service to improve the profitability of the business (Pohlen & La Londe, 1994), among others that will be discussed in the following paragraphs.

***Relevant costs and revenues analysis.*** In order to be consider relevant, costs and revenues must take place in the future and contrast with the alternative courses of action. The future characteristic is important since every decision deals with choosing an alternative based on the expected future result, for which historical costs or sunk costs, for example, are irrelevant for decision-making as they are unavoidable. Also, they have to differ from the alternative courses of action, otherwise the result will not be different, thus decision making will be irrelevant (Horngren et al., 2009). Although a relevant cost can be either variable or fixed, the latter are generally irrelevant for decision making since they typically do not differ from other options. Opportunity costs must also be considered in this analysis, as both the benefit from the chosen option and the loss of the opportunity that was not taken (Blocher et al., 2010). By displaying only the relevant costs and revenues in the analysis, the decision maker can compare and evaluate more clearly the alternatives presented, reducing the possibility of confusion by irrelevant data (Horngren et al., 2009). Nonetheless, Sloan (cited in Blocher et al., 2010), indicated that an inflexible “run of number” approach would not provide the tools for good decision making, instead, there is the necessity to have a wider consideration of the business priorities. For this reason, a strategic cost analysis is also

needed in the decision-making process. This analysis focuses on the competitive context of the decision, along with the comprehension of the firm's strategy and the relevant costs.

Table 9 presents the main differences and considerations between the relevant and the strategic cost analysis.

Table 9

*Relevant Cost Analysis vs. Strategic Cost Analysis*

Relevant cost analysis	Strategic cost analysis.
Short-term focus	Long-term focus
Not linked to strategy	Linked to the firm's strategy
Product cost focus	Customer focus
Focused on individual product or decision situation	Integrative; considers all customer-related factors

*Note.* Retrieved from *Cost Management: A Strategic Emphasis* (5th ed., p.435), by E. Blocher, D. Stout, & G. Cokins, 2010, New York, NY: McGraw-Hill Irwin.

**Accepting or rejecting special orders.** This is the case when a special order is made once for the company and there are no long-term implications that come out of it. Special orders are not frequent in a company's operations, and often represent a small part of the company's business, so they should not become the centerpiece of its strategy (Blocher et al., 2010). However, it is possible that an organization would face this situation, and in order to take the best decision, managers should perform a relevant cost analysis and compare the cost with the price of the special order. Along with the relevant cost analysis, managers have to take into consideration the strategic factors of the company, in this case, the capacity utilization, the short-term and long-term pricing of the product, the possibility of more profitable sales, and any other opportunity cost.

**Make or buy decision.** This situation addresses the possibility that a company has to buy/outsource or make/perform by its own a component/process. The relevant costs to consider are basically those that would be saved if the firm decided to buy the component or outsource the process, which have to be contrasted with the purchase price/payment of the component/process. Among the strategic considerations to take into account for the

appropriate decision, decision-makers must assess the quality of the purchased product, the reliability and experience of the supplier, and the potential use of the plant capacity of the firm. Also, due to the significant strategic implications of this choice, these decisions could easily take years. A detailed study of the different outcomes is usually performed, for which projections of the expected relevant cost are used, while taken into consideration, where necessary, the money equivalence of time (Blocher et al., 2010). Besides, decision-makers must take into account the possible risks of outsourcing. If the firm strongly depends on its suppliers, they will increase their power to bargain, which could result in increased prices, lower quality and delivery performance. To minimize these risks, it is expected from companies to enter into long-run contracts with the specifications of costs, quality, schedules, etc. Further, alliances, partnerships and close relationships with suppliers are also usual practices to minimize these risks. Finally, when dealing with international suppliers, companies should evaluate exchange rate risks, and immediately implement strategies to minimize them (e.g. forward contracts and other derivatives) (Horngren et al., 2009).

***Take part of an additional process.*** The option of selling a product before an intermediate processing step, or to add that process into the operations of the company, and sell the product for a higher price is another common decision that a firm could face. Adding a process to the operations of the firm adds value to the final product in the form of features or functionality in the case of goods, and flexibility or quality for services. However, the risk of obtaining defective products increase as well, and although they can be sold in that state, e.g. outlet stores or discount chains, they can also be restored for sale. All of these possibilities have to be taken into account in a relevant cost analysis, which is a suitable model to succeed in the evaluation of such situations. Once again, the strategic concerns have to be taken into consideration in the evaluation to take a decision within the company. For example, if the product is sold in discount stores, will that decision affect the future sales of

the products because they might be perceived as of lower quality for the clients? (Blocher et al., 2010).

**Keep or drop a product line.** After performing a cost analysis on its lines of products, a company can realize of the actual operating profit per unit of each of its product lines. Then, it is possible that decision makers would think about keeping or dropping them according to the results of the analysis. To better assess this situation, it is necessary to perform once again a relevant along with a strategic cost analysis, in order to review both short-term and long-term strategic focus. Among the long-term strategic factors, it must be considered the potential effect on sales that would have the loss of one product line over others, the effect on the employees' morale and satisfaction – loss of jobs – and in the organizational effectiveness, the potential sales growth of each product line, etc. (Blocher et al., 2010).

**Cost-volume-profit analysis & break-even point.** The cost-volume-profit analysis provides a tool that can help to assess whether or at what specific point a product is profitable. The concept uses the fixed and variable costs, where the contribution margin (MC) is the difference between the price and the variable costs of a product that contributes towards the fixed costs. Therefore, the remaining amount then represents the contribution towards the fixed costs and in turn shows the respective profits.

The profit is calculated using the formula below:

$$\text{Profit} = (Q * (P - VC) - FC) * (1-t)$$

Q = Quantity; P = Price; VC = Variable Costs; FC = Fixed Costs; t = Tax Rate

The part (1-t) of the formula indicates situations where the consideration of tax is required. The break-even point (BEP) is the quantity a firm need to sell to recover all the fixed costs and thus gain a profit of equal to 0. Hence the formula that estimates the costs is:

$$Q_{BE} = FC / P-VC$$

QBE = Quantity to break even; FC = Fixed Costs; P = Price; VC = Variable Costs

The cost-volume-profit analysis offers a starting point in analyzing business problems and can be used to do a sensitivity analysis of respective units, thus it aims to ask simple what-if questions. However, there are limitations to consider in the analysis:

- The price and variable cost per unit should not fluctuate with volume
- Cost-volume-benefit is effectuated for a single-period
- Assumes a situation in which a single product is produced

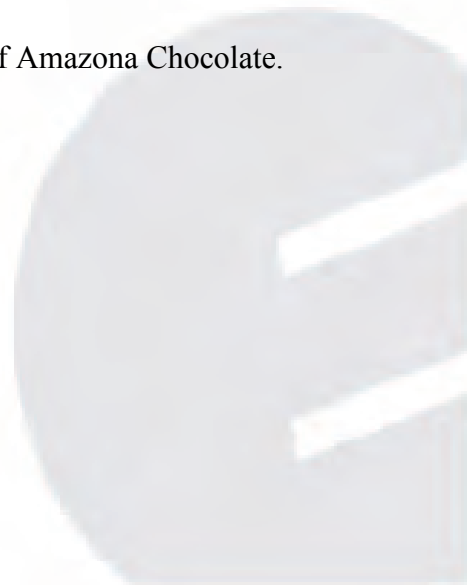
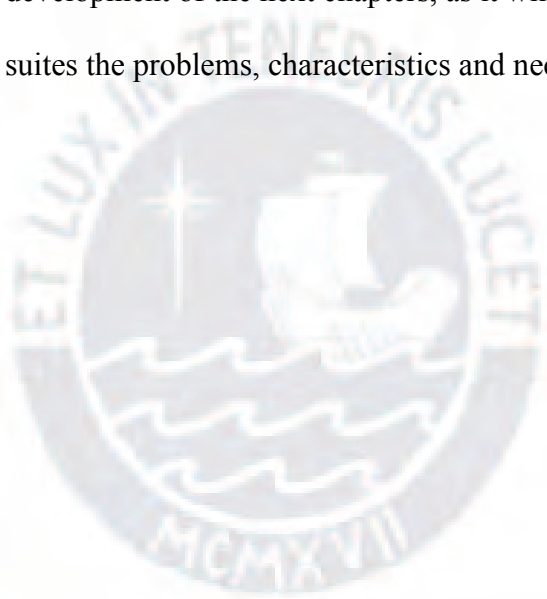
Nevertheless, the assumptions of break-even analysis in combination with a sensitivity analysis can be helpful for Amazona Chocolate in assessing their relative profitability of the respective locations as well as products.

Furthermore, the QBE formula provides some general advantage as it can be used to indicate the individual contribution of a product or department to the overall fixed costs of a company, meaning that the larger the contribution margin the more of the fixed costs are in turn covered by the respective products. Hence, it can be used for a macro analysis of costs and overall quantity needed to break even as well as a micro analysis, where it helps the company to distinguish successful products from unsuccessful using available sale quantities and respective traceable variable and fixed costs for individual products. The information and usefulness of the QBE work in tandem with the concept of variable costing described on 3.2.3. cost accounting systems, where the findings of calculating operational profit can be used to make alteration to the above-mentioned formula ( $QBE = TSV / P - TSV$ ), where TSF are Total Standard Fixed costs and TSV are Total Standard Variable costs.

### **3.3. Conclusions**

The literature reviewed in the present chapter was built from the identified problem statement worked for Amazona Chocolate, with the aim to expand on the knowledge about financial, managerial and cost accounting, with a special emphasis on the latter. The research

showed that there are several different methodologies for costing; however most of them were designed for manufacturing companies, they are still valid for a wide arrange of firms from other industries. The research also briefly touched upon the strategies for the decision-making process regarding managerial accounting since it is known that Amazona Chocolate desires to improve its decision making process to be more competitive in the industry. It was seen that decisions have to be taken based on two different perspectives: through a relevant cost analysis and a strategic cost analysis. Finally, this literature will be used for the development of the next chapters, as it will be helpful to better decide which framework best suites the problems, characteristics and necessities of Amazona Chocolate.





## **Chapter IV: Qualitative/Quantitative Analysis**

Based on the information provided by Amazona Chocolate and from the meetings held with its representatives, the present chapter will perform an exhaustive analysis of the finance and accounting area of the company, which is the department of most concern for the present consulting report. The analysis will be performed in-depth with the information that could be gathered by the consultancy team; however scarce, it demonstrates that the company needs to improve greatly in this area if its desire is to improve the decision-making process, in order to be more competitive in its industry.

Further, it will be introduced the framework from Fisher & Krumwiede (2012) as a theoretical proposal of the different costing methodologies that would build the most suitable costing system for a company. The framework will be explained in the present chapter, to later be used in Chapter VI, in order to evaluate the best costing system for Amazona Chocolate. Finally, it will also be introduced the most used multi-criteria decision methods as part of the quantitative analysis chapter, with the aim to recognize the different methodologies available for assessing different alternatives in a decision making situation based on different options.

### **4.1. Qualitative Analysis**

#### **4.1.1. Financial and accounting qualitative analysis of Amazona Chocolate**

It has been acknowledged in Chapter II that the main problem of Amazona Chocolate relies on reducing its internal costs to be more efficient and effective, especially since the firm holds a wide arrange of products that differ based on the composition of cacao - 72%, 73%, 74%, 78%, 82% - , the place of origin of the cacao beans - Ecoperlacha, Acopagro, Tocache, Approcap - , the presentation of the product - jars, bags, bars - , and the process of the final product – dark plain chocolate, blend chocolate, cacao powder, cacao butter, cacao nibs (see Appendix A, Amazona Chocolate, 2019e).

As stated before, during the working meetings held with the company, it was shared with the consultancy team valuable information about the operations of Amazona Chocolate; however, it was worth noting that the information was retrieved from calls to the operational employees and from a personal bookkeeping source in possession of the general manager. It is important to acknowledge that such sensible and important information should better be kept in a digital platform such as the company's computer or any other digital device.

Moving forward, the meeting proceeded by an explanation of what were the most important costs involved in the process of obtaining one unit of Amazona Chocolate's products. The process is rather simple as the firm does not own the stage of processing of its products, instead, this activity is outsourced to local manufacturing companies. In this sense, Amazona Chocolate is only in charge of transporting the raw materials (cacao beans, butter and sugar) to the factories and picking them up once they are finished. The products are delivered in what is known as master boxes, a package that contain a mix of bars and coins (as it is usually requested by Amazona Chocolate) in a proportion that was estimated by the company to be 90% coins of 5gr in bags of 1kg and 10% bars of 60gr or 400 gr. Once the product is received, it is immediately transported to its warehouse, which is conveniently located next to the office of Amazona Chocolate.

Then, the products are handled by the employees in order to be packaged and labeled. In this last process, the company has realized that its products lose some quality as they are handled for a second time. For this reason, the firm has requested one of its manufacturer suppliers to take charge of the packaging of some of its batches to evaluate the final quality of the packaged products. Although no complaints about the quality of its products have been received, it is easy to note the difference in the quality of the batches packaged by the manufacturer and those performed by Amazona Chocolate. Through this small project, the company desires to assess the trade-off between the quality and costs of its products;

however, if they are not aware of the costs incurred in the packaging of their products, it would be most difficult to evaluate correctly this decision.

All of the steps above mentioned were recognized by the company to be directly traced to the products and dependent on the produced quantity, meaning that they are considered to be variable costs for the operations of Amazona Chocolate. However, one could argue that transportation costs (raw materials to factory and finished products to warehouse) are not specifically direct costs, but they could be considered as variable costs since the limited capacity of the transportation vehicle makes the cost to increase if more inputs are required for a higher production, and more finished products will need of, either a bigger vehicle or more than one delivery round. The remaining cost and expenses were treated as fixed costs (Appendix B), as they were thought not to change with a variation in production. Also, the management of Amazona Chocolate prefers to evaluate its fixed costs on a monthly basis because the firm is managed in a more operational way, rather than in a strategical one. For this reason, most of the decisions performed by the company have a short-term scope, which is logical due to the characteristics and resources of the firm.

Another important aspect to analyze in the present chapter is the financial accounting numbers of the company, as well as its financial ratios. An evaluation of these figures is important because it allows to evaluate the performance of the company, check if its profit margins are attractive or unattractive. Although the company hires an external professional to take up the accounting tasks of the firm since it is mandatory for any company to present their results by the end of the year to the national tax collector entity Superintendencia Nacional de Aduanas y de Administración Tributaria (SUNAT), the information could not be provided to the consultancy team. However, the company's sales information was indeed delivered to the consulting group. This information will be evaluated in the quantitative part of Chapter IV.

#### 4.1.2. Framework for costing systems

As it was introduced in Chapter III, Gurowka & Lawson (2007) indicated that the requirements for cost information will depend on the characteristics, capabilities, and resources of the organization. Further, they established that the choice to select a costing tool methodology have two main components to consider (Figure 13). These components or dimensions measure the complexity of the costing system (simple vs detailed), and the goals that the organization aims to achieve with the costing system (operational vs strategic). According to this framework, the appropriate tool will depend on the outcomes of the assessment performed to the environment of the firm, the internal characteristics of the organization, the own requirements of the company, and how the tool relates to these demands.

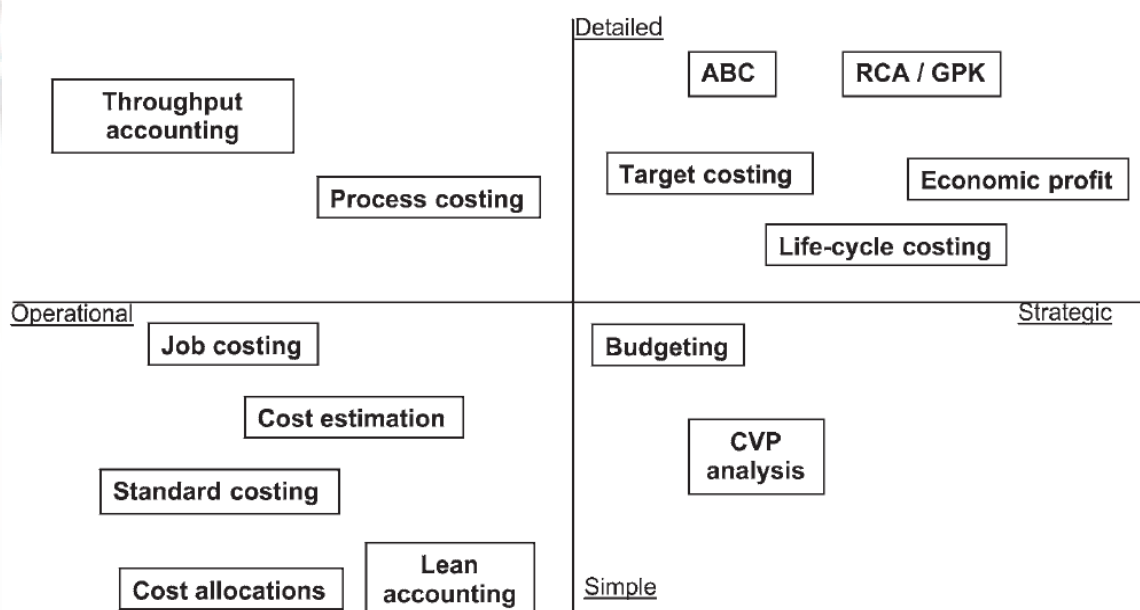


Figure 13. Costing tool tradeoff matrix.

Retrieved from "Selecting the right costing tool for your business needs," J. Gurowka and R. A. Lawson, 2007, *Journal of Corporate Accounting & Finance*, pp. 21-27.

Further, Fisher & Krumwiede (2012) recommended to assess the costing system by evaluating three dimensions: (a) convenience – how convenient is to get the cost information needed? (b) correctness – are the current costs reasonably accurate? and (c) costs of

implementation – are the costs of implementing and maintaining the system reasonable?

Meanwhile, they also indicated that four key questions must be addressed when selecting a new product cost approach, they are:

- Which costs should be included in product cost?
- At what level of detail should we track direct product costs?
- How do we organize indirect product costs?
- How do we allocate indirect costs to products?

For each of the listed questions, they provide an array of cost approaches that a firm can assess in order to come up with the best costing tool structure for its necessities. For the first question, they mention that the costing alternatives available are throughput costing, variable costing, full absorption costing and life-cycle costing. Each of them considers one more cost level in terms of the type of cost that should be assigned to the products (Figure 14). In this way, throughout costing considers direct materials and labor, variable costing considers direct materials, labor and variable factory overhead, full absorption costing considers all of the previously mentioned costs plus fixed factory overhead, and life-cycle costing adds the non-factory costs from the costs incurred in the R&D and design to the costs incurred in the customer service and disposal. For this question, and the rest of them, the authors have elaborated a graphic scale (Figure 15) on which the costing alternatives have been distributed according to the number of costs that will be included in the product cost (low vs high for question 1); the level of detail to track direct product costs (job vs resource for question 2); level of organization of indirect product costs (simple vs complex for question 3); and the level of allocation of indirect costs (simple vs complex for question 4). Chapter III has reviewed these costing approaches in-depth for a better understanding of how they work and are defined.

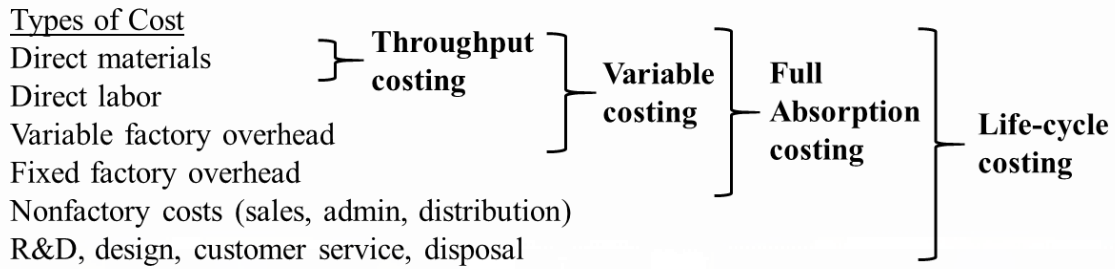
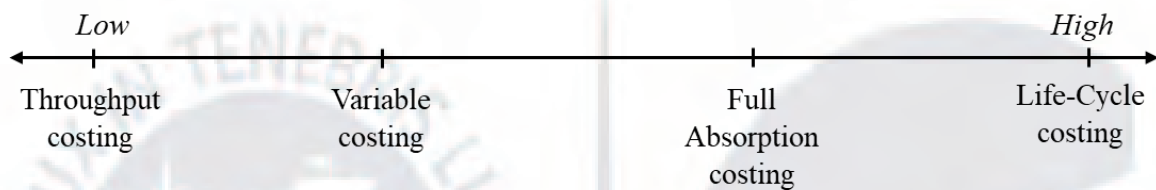
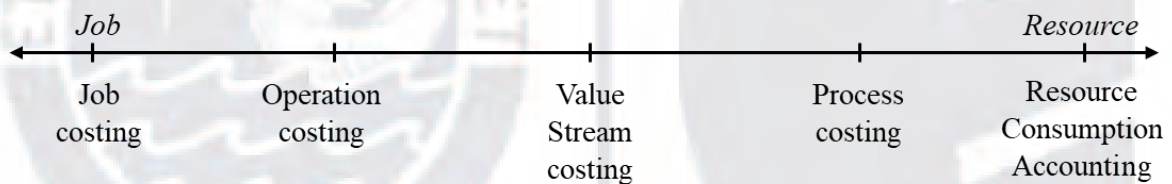


Figure 14. Levels of product costing completeness.  
 Retrieved from “Product costing systems: finding the right approach,” J. Fisher & K. Krumwiede, 2012, *Journal of Corporate Accounting & Finance*, 23, pp. 43-51.

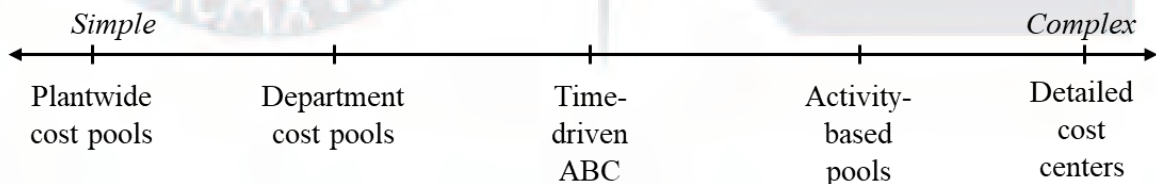
**1. Which costs should be included in product costs?**



**2. At what level of detail should we track direct product costs?**



**3. How do we organize indirect product costs?**



**4. How do we allocate indirect costs to products?**



Figure 15. Four major costing continuums.  
 Retrieved from “Product costing systems: finding the right approach,” J. Fisher & K. Krumwiede, 2012, *Journal of Corporate Accounting & Finance*, 23, pp. 43-51.

## 4.2. Quantitative Analysis

As part of the quantitative analysis of Amazona Chocolate, it will be analyzed the costs and revenues from the sales of the company as much in detail as it is possible, although the information provided only covers the sales in a general view. Also, the costs come from an estimation based on the information provided by the company. Finally, it will be introduced in chapter 4.2.2. the different multi criteria methodologies, one of which will be used for the assessment of alternatives from Chapter VI.

### 4.2.1. Financial and accounting quantitative analysis of Amazona Chocolate

The revenues are distinguished by the management department according to the two main ways of income for the firm. They are the sales from farmer and vegan markets (Miraflores, La Molina, Surquillo, Barranco and Magdalena), which are business to customer or B2C selling channels; and Horeca channels, an acronym for Hotels, Restaurants, and Cafes, which are business to business or B2B selling channels. Among the revenues obtained in the B2C channels, the company also differentiates its sales according to the payment method, either by cash or card (POS). This differentiation is important for the management area since they have to pay 3.5% of the sales made through POS devices to the bank. For the year 2018, the distribution of the revenues of Amazona Chocolate, accounted for 51% for the income that was received by cash, 5% by POS – making 56% of the income coming from the markets – and 44% from the Horeca's selling channels (see Figure 16 and Table 10).

These numbers indicate that the markets are an important source of income for the company, however, the B2B channels also account for an important percentage of the revenues of Amazona Chocolate, for which they should not be left aside. The income of POS devices from the markets still remain low, which is an expected result due to the characteristics of a farmer market and also because the Peruvian market is keen to use cash rather than cards (García, 2019 July 01). However, it is important to remember the trends

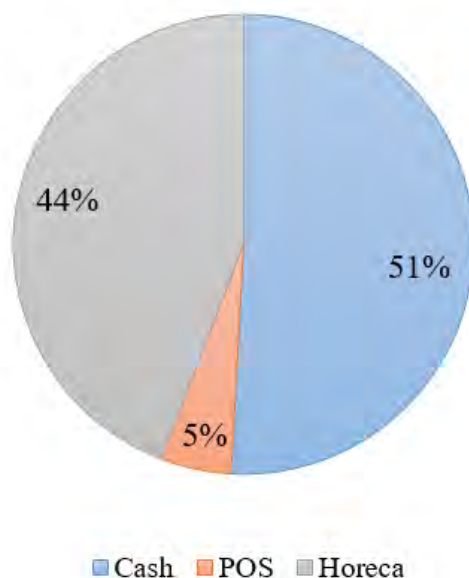


Figure 16. Distribution of revenues' sales of Amazona Chocolate for the year 2018. Retrieved from Amazona Chocolate (internally provided information).

Table 10

Revenues from Sales of Amazona Chocolate for the Year 2018 (Total and Average)

	Average 2018		Total 2018	
	S/	%	S/	%
Cash	S/ 53,390.64	51%	S/ 640,687.70	51%
POS	S/ 5,365.71	5%	S/ 64,388.50	5%
Horeca	S/ 45,934.04	44%	S/ 551,208.51	44%
Total	S/ 104,690.39		S/ 1,256,284.71	

Note. Retrieved from Amazona Chocolate (internally provided information).

indicated by a study performed by ASBANC, the Peruvian Bank Association, that established that it is expected more people will prefer to pay by card in the following years, as there are still important structural limitations that hinder the process, such as the high levels of informality, corruption, and an insufficient financial inclusion in the country (CONFIEP, 2018 October 23). Although too soon to conclude, the trend indicated by ASBANC is also perceive in the percentage of payments made by POS from the total revenues, for the period between January 2018 to July 2019.

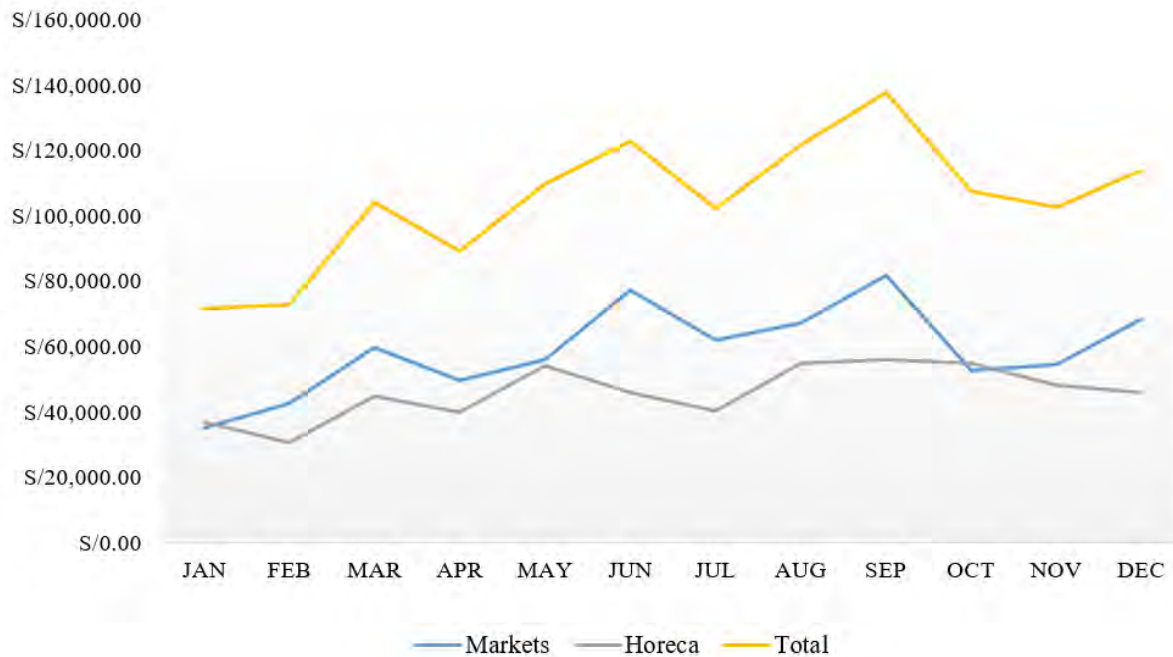




*Figure 17.* Growth of POS revenues for the period January 2018 - July 2019. Retrieved from Amazona Chocolate (internally provided information).

Then, it is also possible to see the sales behavior during the year 2018 (Figure 18) and what has been collected for the first six months of the year 2019 (Figure 19). It is observed that the total revenues average S/100,000 per month, which is higher than the monthly fixed costs displayed in the Appendix B (around S/43,600). By evaluating both numbers, it is easy to identify that the company is making net profits; however, it is still unknown if they are being completely efficient and effective. As indicated previously, the wide arrange of products that Amazona Chocolate offers to its customers and clients is a double edge sword. From one perspective, Amazona Chocolate is being receptive to the needs of its clients, and through a mix of different presentations and products, the firm is able to gain and retain a bigger market share. But this assessment, in order to be complete, also requires of a quantitative analysis regarding the revenues and costs performed for each of the product lines.

The company's revenues for the first four months of the year 2019 seem to be similar to those from the previous year. Then, in May there was a decrease of the sales in comparison to the same month of the year 2018; however, an increase is seen in the months of June and



*Figure 18.* Monthly revenues of Amazona Chocolate for the year 2018. Retrieved from Amazona Chocolate (internally provided information).

July. There is not much to be said about the behavior of the sales of the company in the year 2019, as the period has not ended yet, although, more efforts should be putted to increase the sales in the final period, as it is always expected an increase of revenues and profits in any firm.

Regarding the costs first, it will be analyzed the fixed costs provided by the firm. It can be seen that among the highest fixed costs, the management payments represent nearly 21% of the total fixed costs, nonetheless, they account for the salary of two important resources on the company, the general manager and the warehouse supervisor. The next important cost incurred by the company is related to the farm and vegan markets. The labor and stand fees of the market sum up to a total of almost 13% of the fixed costs, once again these costs seem to be critical for the firm as the markets are an important source of income for Amazona Chocolate as it was evaluated in previous paragraphs, for which once again it is difficult to make any cuts. However, improvements could be made in the minor expenses which account for almost 7% of the fixed costs and it is comprised of different costs such as office supplies, logistics to feria markets and B2B deliveries, among others. A more detailed



*Figure 19.* Monthly revenues of Amazona Chocolate for the year 2018 and 2019 (July). Retrieved from Amazona Chocolate (internally provided information).

structure of this expense will be needed in order to provide recommendations on how to decrease the expenses in this area. It is interesting to note that costs of logistics for the B2B channels of distribution, which is included in the minor expenses, is lower than the costs incurred in the feria markets, although the revenues from both channels of distribution are close to each other (56% vs 44% for the year 2018). In this sense, the firm could destine more resources and efforts to increase its sales through the B2B channel, without leaving aside their customers in the feria markets. Finally, another strong cost pool in the fixed cost structure of Amazona Chocolate is the one identified as management costs, which accounts for nearly 6% of the total fixed costs. According to the company's representative, the costs incurred in this pool are part of different expenses that are needed to represent the firm's interest in situations like meetings, trips, ferias, events, and more. Amazona Chocolate estimates the total value of this cost as a percentage of the total sales (2.5%). In order to reduce the costs incurred in this group, the company should try to reduce the expenses, if any, in luxury or expensive hotels, restaurants, and also try to take advantage of promotions, flight miles, among others.

Moving forward to the analysis of the variable costs, due to the wide arrange of products of the company, an assessment of the two most valued products of the firm will be analyzed. They are the 72% Valle del Chanka and 82% Perlacha chocolates in the presentation of coins of 5gr in bags of 500 gr and in jars of 200 gr. These two products are specifically valuable for the company since they both are produced with cacao beans from the Ecoperlacha farm, which is owned by the general manager's family, and whose production have been greatly researched and enhanced in the last years in order to obtain the best quality of cacao bean. Due to the investment on the farm, the beans are charged a premium to Amazonas Chocolate, so the firm pays S/16 per kg, while suppliers from other farms and cooperatives charge between S/10.5 – 13.5 per kg. Further, analyzing these two lines of products is reasonable as they are the chocolates with the highest and lowest composition of cacao among the dark plain line of chocolates from the firm.

Table 11

*Variable Costs for Perlacha 72% and 82% in Bags of 500 gr*

	Perlacha 72%		Perlacha 82%	
	(S/)	(%)	(S/)	(%)
Cacao liquor	13.20	45%	15.40	51%
Cacao butter	2.60	9%	2.17	7%
Sugar	2.25	8%	1.44	5%
Transportation	0.50	2%	0.50	2%
Processing	10.50	36%	10.50	35%
<b>Total cost of processing 1 kg chocolate =</b>	<b>29.05</b>	<b>100%</b>	<b>30.01</b>	<b>100%</b>
Net weight of the product =	500	gr.	500	gr.
Cost for 500 gr. of chocolate	14.52	89%	15.00	89%
Package and label	1.55	9%	1.55	9%
Labor	0.25	2%	0.25	1%
<b>Total cost of the product =</b>	<b>16.32</b>	<b>100%</b>	<b>16.80</b>	<b>100%</b>

It can be seen from Table 11 that, although the composition of cacao changes, the final cost of the product does not display an important variance. As expected, the cost of the

cacao, liquor and butter, account for the majority of the cost (more than 50%) if compared to the cost of producing 1kg of chocolate (not considering the packaging and labeling costs).

Another important cost is assigned to the processing of the materials, which is also expected as it is an outsource activity. What is interesting to note is that the cost of the packaging and labeling accounts for almost 10% of the final cost of the product. This could be explained by the increased cost due to the FSC certification of the bag supplier. However, Table 12 displays a figure that is worth noting. In the case of the jars of 200gr the contribution in costs of the labeling and packaging in comparison to the cost of the final product, is higher than in the bags. This is the result of considering that the bag contains more chocolate than the jar (500gr vs 200gr). Once again, this is only one view in the evaluation of product lines as the firm recognizes that providing chocolates in a presentation of coins and in jars of 200gr allows them to gain more clients. Although the jars seem to be more expensive than the bags, it should be critically studied by Amazona Chocolate if the jar presentation of 200gr is indeed attracting customers to its business.

Table 12

*Variable Costs for Perlacha 72% and 82% in Jars of 200 gr*

	Perlacha 72%		Perlacha 82%	
	(S/)	(%)	(S/)	(%)
Cacao liquor	13.20	45%	15.40	51%
Cacao butter	2.60	9%	2.17	7%
Sugar	2.25	8%	1.44	5%
Transportation	0.50	2%	0.50	2%
Processing	10.50	36%	10.50	35%
<b>Total cost of processing 1 kg chocolate =</b>	<b>29.05</b>	<b>100%</b>	<b>30.01</b>	<b>100%</b>
Net weight of the product =	200	gr.	200	gr.
Cost for 200 gr. of chocolate	5.81	74%	6.00	75%
Package and label	1.35	17%	1.35	17%
Labor	0.66	9%	0.66	8%
<b>Total cost of the product =</b>	<b>7.82</b>	<b>100%</b>	<b>8.01</b>	<b>100%</b>

#### 4.2.2. Multi criteria decision alternatives

In order to perform the assessment of the costing methodologies introduced in chapter 4.1.2. which were also researched in Chapter III, it will be reviewed what are the methodologies that can be used to choose the best costing approach for Amazona Chocolate. The literature indicates that there are many multi criteria decision (MCD) methods that have been created to be used for different purposes. All of them have their advantages and disadvantages as well as their own areas of application (Velasquez & Hester, 2013). These methodologies can be simple to implement such as the simple additive weighting (SAW), also known as weighted product model (WPM), to very complex models that require of programming computers, numerous simulations, or lots of input (e.g. goal programming, case-based reasoning, multi-attribute utility theory, and others). Table 13 displays a summary of the most used multi criteria decision methods, along with their advantages, disadvantages and areas of application (Velasquez & Hester, 2013).

To perform the qualitative analysis, the present report estimates to be convenient to use the weighted scoring method (WSM) as it is a simple and the most often multi attribute decision technique (Afshari, Mojahed, & Yusuff, 2010). The Department of Finance of the UK government (2015, November 5) provided in its webpage the methodology to evaluate different options based on multiple criteria. The procedure involves to identify the non-monetary factors (or attributes) that are relevant for the project, then allocate weights to each factor in order to reflect the relative importance of each of them. The most common approach is to assign the weights as percentages that sum up to 100%. Later, each option is assessed and assigned a score for each of the factors to relate its performance in relation to each attribute. Finally, the result will be deployed as a single weighted score for each of the options, which will allow the comparison of the different alternatives based on their overall performance.

Table 13

*Summary of the Most Used MCD Methodologies*

Method	Advantages	Disadvantages	Areas of Application
Multi-Attribute Utility Theory (MAUT)	Takes uncertainty into account; can incorporate preferences.	Needs a lot of input; preferences need to be precise.	Economics, finance, actuarial, water management, energy management, agriculture
Analytic Hierarchy Process (AHP)	Easy to use; scalable; hierarchy structure can easily adjust to fit many sized problems; not data intensive.	Problems due to interdependence between criteria and alternatives; can lead to inconsistencies between judgment and ranking criteria; rank reversal.	Performance-type problems, resource management, corporate policy and strategy, public policy, political strategy, and planning.
Case-Based Reasoning (CBR)	Not data intensive; requires little maintenance; can improve over time; can adapt to changes in environment.	Sensitive to inconsistent data; requires many cases.	Businesses, vehicle insurance, medicine, and engineering design.
Data Envelopment Analysis (DEA)	Capable of handling multiple inputs and outputs; efficiency can be analyzed and quantified.	Does not deal with imprecise data; assumes that all input and output are exactly known.	Economics, medicine, utilities, road safety, agriculture, retail, and business problems.
Fuzzy Set Theory	Allows for imprecise input; takes into account insufficient information.	Difficult to develop; can require numerous simulations before use.	Engineering, economics, environmental, social, medical, and management.
Simple Multi-Attribute Rating Technique (SMART)	Simple; allows for any type of weight assignment technique; less effort by decision makers.	Procedure may not be convenient considering the framework.	Environmental, construction, transportation and logistics, military, manufacturing and assembly problems.
Goal Programming (GP)	Capable of handling large-scale problems; can produce infinite alternatives.	It's ability to weight coefficients; typically needs to be used in combination with other MCDM methods to weight coefficients.	Production planning, scheduling, health care, portfolio selection, distribution systems, energy planning, water reservoir management, scheduling, wildlife management.
ELECTRE	Takes uncertainty and vagueness into account.	Its process and outcome can be difficult to explain in layman's terms; outranking causes the strengths and weaknesses of the alternatives to not be directly identified.	Energy, economics, environmental, water management, and transportation problems.
PROMETHEE	Easy to use; does not require assumption that criteria are proportionate.	Does not provide a clear method by which to assign weights.	Environmental, hydrology, water management, business and finance, chemistry, logistics and transportation, manufacturing and assembly, energy, agriculture.
Simple Additive Weighting (SAW)	Ability to compensate among criteria; intuitive to decision makers; calculation is simple does not require complex computer programs.	Estimates revealed do not always reflect the real situation; result obtained may not be logical.	Water management, business, and financial management.
Technique for Order Preferences by Similarity to Ideal Solutions (TOPSIS)	Has a simple process; easy to use and program; the number of steps remains the same regardless of the number of attributes.	Its use of Euclidean Distance does not consider the correlation of attributes; difficult to weight and keep consistency of judgment.	Supply chain management and logistics, engineering, manufacturing systems, business and marketing, environmental, human resources, and water resources management.

*Note.* Retrieved from "An Analysis of Multi-Criteria Decision Making Methods," M. Velasquez & P. Hester, 2013, *International Journal of Operations Research*, 10, pp. 56-66.

It is important to indicate that the UK government (2015, November 5) indicated that the weighing of the identified attributes is a matter of judgement that should reflect the consensus of the interested parts of the project. As for the scoring of the options, it established that the scale should be consistent by considering the same mathematical demands for all of the attributes. Moreover, the maximum and minimum scores should be clearly defined and the scoring system should be clearly documented in the appraisal of the report while having a common understanding of it by the member of the project.

### **4.3. Conclusions**

The present chapter has analyzed qualitatively and quantitatively the operations, accounting and financing areas of Amazona Chocolate, while also introducing the tools and methods that will later be used to assess the alternative solutions, in this case, a costing system that improve the decision-making for Amazona Chocolate. Through the qualitative analysis, it was noted that the company is not securing nor keeping its accounting information in the most efficient way. It will be most beneficial for the firm to keep record of this vital data in a digital device such as the company's computers as it will be easier to access the information to later be added, aggregated and/or updated any more information concerning this area. Further, having its accounting data in a digital device, will help the company to analyze financial ratios, which would lead them to be more efficient. As for the quantitative analysis, it allowed to assess the sales performance of the company, as well as the costs incurred by its line of products. However scarce was the information from the company, important ideas and recommendations were established in the present chapter, that will help the consultancy team to recognize the key activities that have to be implemented in the firm in the means to have a better understanding and control from its internal costing. These ideas will be materialized in Chapter VII regarding the implementation of the chosen solution.



## Chapter V: Root Cause Analysis of the Problem

As discussed in Chapter II and Chapter IV, Amazona Chocolate is performing well, but it is looking for improvements in its internal supply chain to improve on and decrease its costs and expenses. Decreasing costs in its supply chain will improve the company's performance in the chocolate market on the long term and therefore increase its competitiveness. The consultancy team realized that before one can improve on the costs, one need to have a clear overview of the costs and its structure. This is what the company is lacking. Chapter III and IV have identified several ways of creating a proper cost structure and overview for Amazona Chocolate. There are easy options, cheap options, but also time consuming and highly elaborated options. All options will create a cost structure for the company and will therefore create an overview of the costs involved.

For this reason, this chapter will focus on our second sub-question (Chapter II, paragraph 2.2.2) and not continue discussing the lack of a proper cost structure. Once implemented, what improvements can we identify to improve on the internal costs (Figure 20). Both qualitative and quantitative research in chapter four have already identified some potential improvements. This chapter will focus on the improvements on the cost side of the company and will analyze the costs based on the part of the supply chain they apply to. Chapter V will continue with a deeper explanation of the supply chain followed by an overview of all the possible improvements and opportunities that can be analyzed with the new cost structure.

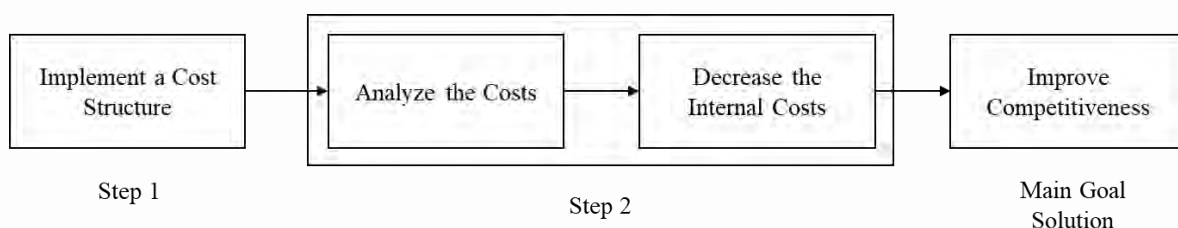


Figure 20. Overview of the research: the steps towards the solution.

### 5.1. The Root-Cause Analysis

But before it is analyzed the opportunities for Amazona Chocolate, it is important to also take a look at why the consultancy team came up with the idea to focus on the internal cost structure. The company wanted to have more inside on its internal costs, in order to monitor and improve them. Improving its internal costs will enhance its competitive position in the new niche market where they perform. This is a highly valid problem and worth investigating; however, the consultancy team wanted to take it a step deeper. In order to analyze and improve the internal costs, it is needed to know what and where they are encountered. For this reason, it was decided to focus on deciding which costing system will improve the operations of Amazona Chocolate.

Why did Amazona Chocolate not have a cost structure in place? why did they not properly analyze their internal costs? The fishbone diagram underneath displayed in Figure 21 will provide an overview of the reasons. It was identified four main causes for which the company did not have nor implemented a costing system. The first of them is the (lack of) availability of financial resources. Amazona Chocolate is rather a small company that is not willing to invest in a large and expensive costing system. Although they are, allegedly, profitable, most if not all of the profits are reinvested in other areas where they consider are of major priority, such as the research and development of the farm and products, the expansion of the business, among others. The second and third cause of the problem are related and linked to human capital and time. Even if Amazona Chocolate would have invested in a costing system, there would not be the people to operate it. The employees are busy dealing with the day-to-day activities and have no extra time to deal with the extra cost analysis. Further, without a proper implementation plan, the result would have been a failure and wasted resources. Finally, it is also a matter of skills. The management is busy enough to perform the operating procedures, so he should be only requested to evaluate the numbers

and decide based on them. Then, the employees are not experienced and might not also have the knowledge to build and operate a costing analysis tool. If one does not know what to do, it will of course not do it. For this reason, the present report aims to provide a structure in which all stakeholders are able to deal with the new costing tool and use it to improve the internal costs of the firm.

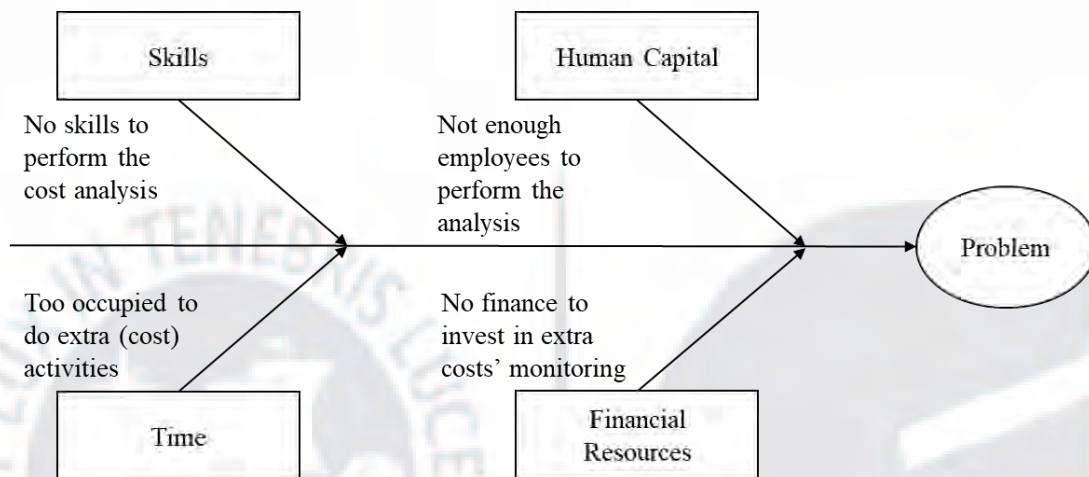


Figure 21. Fishbone diagram, root-cause display.

## 5.2. The Value Chain of Amazona Chocolate and Potential Opportunities

As discussed earlier, if Amazona Chocolate is able to implement one of the suggested costing structures, it could identify several factors of improvement within its supply chain. Some costing systems give more insight than other costing systems, some take for example only variable costs into account, and some link costs only to products and labour. For this reason, the chosen system in Chapter VI will influence the amount of identified opportunities for Amazona Chocolate. This paragraph will discuss the opportunities found in the quantitative and qualitative research. The opportunities will be linked to the supply chain to create a proper overview. Both Figure 22 and Figure 23 show the value and supply chain that Amazona Chocolate is involved in.

Amazona Chocolate buys beans from cooperatives and from the farm owned by the general manager's family, the Ecoperlacha farm. The price for the beans that come from the



Figure 22. From tree to bar: Amazona Chocolate's value chain.



Figure 23. Deeper insight of Amazona Chocolate's supply chain and internal operation processes.

Ecoperlacha farm are almost twice as expensive as the beans from the regular cooperatives. This is something the company should have a closer look at. Important questions that Amazona Chocolate should ask are: 'do we want to decrease our margin and profitability in order to help sustaining and improving the Ecoperlacha farm?' and if so, 'can we do something to gain back margin by for example an extra marketing strategy to validate the higher price paid for these cacao beans?'. Once the proper costing system has been decided, it can be more clearly evaluated the costs related to this issue.

Discussing the transportation afterwards, it has to be analyzed the movement of the beans from the cooperative's warehouse to the factory. This is arranged and executed by Amazona Chocolate, by renting a van that takes the beans to the factory. An interesting fact here is that the van and the driver cost the same every time. Whether there is a large quantity or a small quantity needed, the costs for the van and the driver will be the same. Interesting

here is to look at the optimal order quantity. 'How many beans are need?', 'how much can be taken?', and 'what do the warehouse's holding costs are?'. Evaluating all these costs under the new costing system will allow assessing what is the most economical way of transporting the beans.

The next step in the chain is the processing of the beans. This happens in several factories handpicked by the general manager of the company. All the factories it works with have several certifications that are needed to meet the product quality. Interesting opportunities here are for example to have a look at the difference in price if it would produce all products at the same factory? It could negotiate quantity discount and it would save on transportation cost. Also, since Amazona Chocolate has a new, niche, and emerging product, it might be able to find a factory to partner with. Synergy would apply and the cost could go even lower. These are all interesting facts that can be looked at when having an accurate cost system in place.

Transportation 2 (Figure 23) refers to the drive between factory and warehouse, after the final products are completed. This is an important drive, since the cool chain needs to be guaranteed. One of Amazona Chocolate's employees has to drive to the factory to pick up the master boxes with the products. The products do not contain any preservatives, so the chocolate is not supposed to melt during the trip. Also, here the costs are important, one trip to one factory or one trip to several factories?

Once the products have arrived at the warehouse, the products need to be unloaded, unpacked, organized, stored, and reported. This is quite a labor-intensive job, since the employees do this entire process by hand. These are important costs, because the employees executing this job are not working on packing the coins when unloading, so it is a loss of performance for the packing department. These costs together with the costs for the air conditioner (to maintain the cool chain) are important to evaluate because they could be very

high for Amazona Chocolate. For example, if one of the factories is able to package the products and deliver them, although it might seem more expensive, if all costs are correctly included and evaluated, it might be cheaper to outsource. The new cost system should be able to create insights into this area. Also, as discussed earlier, holding cost for the products play an important role here. The company should ask, do we want to store beans here, or only final products? and if yes, how many? what are the costs that can be saved and what costs will be increased by doing that?

Then the handling and packing process of the products will come with some interesting opportunities as well. Bars come ready to be sold from the factory, coins however need to be repacked and labelled. Why is this so? a labor-intensive job that has about 3-4 people involved on a daily basis. What costs are incurred on this area? is this cheaper than packing it someplace else? also, the quality and the appearance of the chocolate seems to change when being repacked in the warehouse. Is there a decrease in sales because of this? cost for packaging in the factory and the quality aspect are very important to consider in this part of the supply chain. The selection of the costing method should be able to clear this option and help the general manager to improve the decision-making process to achieve in the medium-term competitiveness in the market.

Once all products are repacked and ready to be sold, the products are shipped to the local markets every weekend. One employee will drive the company's car passing all the feria markets delivering the products. This seems like a good process already. One thing is important though, the cold chain cannot be guaranteed here. Therefore, it is important to keep track of all the products that lose value because of a potential lack in the cold chain. Also, something important to consider, what is going to happen when the company starts growing and expanding? will it still be one car that drives around town? or should it be invested in other options?

Lastly, we will have a look at the opportunities for the markets. A topic that has been discussed earlier is the pricing strategy. All products look alike, which is good, because it shows the style of the company. The downside of this is that the customers also assume the value of the products to be the same. Two jars, one costing 35 soles and one 50 soles, how can Amazona Chocolate validate that difference? also, how does this influence the sales? the new costing system should be able to differentiate between this. It is very interesting to see which products contribute to the overall margin of the company. Are there any products obsolete, or costing more than they are worth? different pricing strategies per product or per product group might be necessary. Also, something interesting to consider is the education of the staff and therefore also the education of the customer. Increasing the amount of education and training for the employees is expensive, but it might come with an increase in sales. If a sales clerk is able to explain why a customer should buy a certain product, he might be able to convince the customer to buy a more expensive product, or a product with a better margin. The new cost system should help to clarify issues like this in this part of the supply chain.

As stated earlier, the new system should help us to identify and structure costs in order to improve on them.

### **5.3. Conclusions**

The present chapter recognized the different causes that have led the company to be involved in the problem statement identified in Chapter II regarding the lack of a costing structure in its operations. Then, if Amazona Chocolate could implement the correct costing system it would be able to recognize all the pitfalls where they are not performing correctly regarding its cost control. In this sense, Amazona Chocolate will be able to address many of the above mentioned points of improvements for the decrease of its internal costs. These opportunities should be identified and acted upon. Once done it will increase its

competitiveness in the industry. Table 14 shows an overview of all the identified opportunities organized per part of the value chain.

Table 14

*Opportunities per Part of the Value Chain*

Value chain activities	Identified opportunities
1. Buying beans	Ecoperlacha vs. other cooperatives
2. Transport 1	Fixed cost for the truck Different quantities per load No regularity
3. Choosing a factory	Which factory has which certificates and which possibilities?
4. Transport 2	Cool chain
5. Warehouse	Holding cost vs ordering cost
6. Handling	Packing included? Quality guarantee
7. Transport 3	Many markets Cool chain
8. Markets	Pricing strategy – 82% Margins Education of staff and customers



## **Chapter VI: Assessed Solution Alternatives**

The present chapter aims to evaluate the best alternative among the possible solutions that could be implemented to solve the identified problem for Amazona Chocolate. As it was established in Chapter II, Amazona Chocolate needs to have better control of its internal costs to be more efficient and effective, in order to be more competitive in an industry where competition has greatly increased in the last years due to the profitability of the business, while the market has been heavily driven by the quality of the offered products. Since Amazona Chocolate already possesses a differentiated product, the aim of the firm now is to work on its internal costs, for which it is proposed to establish a costing system that best suits the necessities of the organization. From this reasoning, it is proposed to evaluate the different costing systems developed in the literature review, and apply them under the framework of Fisher and Krumwiede (2012) introduced in Chapter IV. The costing system evaluation will be carried out under one of the multi-criteria decision methodologies, also introduced in chapter IV.

### **6.1. Alternatives to Solve the Problem**

Due to the lack of awareness and control of the internal costs of Amazona Chocolate, the present consulting report determined necessary to research the different costing alternatives and methodologies available in the literature. This is the reason for which the alternatives to solve the problem are raised as the universe of costing systems that could be implemented in any company. However, it was during the research performed in Chapter III that it was found that numerous and different authors advised companies to evaluate correctly the costing system that was meant to be implemented, based on its characteristics, resources and necessities. Further, due to the wide array of costing tools available, each of them has different characteristics and approaches which can be more beneficial for some companies, while for others the outcome might not be as expected. It is for this reason that before it is

performed the assessment of the costing system, it will be beneficial for the evaluation to identify what are the major advantages and disadvantages of each of the costing methodologies and its approaches for cost pools and drivers.

Based again on the research performed in Chapter III, Tables 13-16 present a summary of the favorable and unfavorable characteristics of the costing methodologies, which is primarily based on the framework of Fisher and Krumwiede (2012). On the information obtained from tables 13-16, it will be possible to identify which methodologies are more suitable for the characteristics, problems and needs of Amazona Chocolate, for which the identification of these attributes is important in the evaluation of the best alternative to solve the problem statement formulated for Amazona Chocolate.

Table 15

*Advantages and Disadvantages of Costing Methodologies to Assign Costs to Products*

Methodologies to assign cost to products	Advantages	Disadvantages
Throughput costing	<ul style="list-style-type: none"> <li>- Discourages inventory buildup – consistent with just-in-time</li> <li>- Simple to implement</li> </ul>	<ul style="list-style-type: none"> <li>- Operational aim, may lead to strategic errors</li> <li>- Not allowed under GAAP standards</li> </ul>
Variable costing	<ul style="list-style-type: none"> <li>- Allows cost-volume-profit (break-even) analysis</li> <li>- Consistent with a contribution margin approach</li> <li>- Relatively simple to implement</li> </ul>	<ul style="list-style-type: none"> <li>- Aimed for short-term strategic decision making instead of long-term</li> <li>- Not allowed under GAAP standards</li> </ul>
Full absorption costing	<ul style="list-style-type: none"> <li>- Allowed and even required by GAAP and IAS (International Accounting Standards)</li> <li>- Commonly used and understood</li> </ul>	<ul style="list-style-type: none"> <li>- Can motivate unnecessary inventory buildup</li> <li>- May treat fixed production costs as variable</li> </ul>
Life-cycle costing	<ul style="list-style-type: none"> <li>- Very detailed and complete assessment of costs by analyzing the value chain of the product</li> <li>- Best fit for long-term product decisions</li> </ul>	<ul style="list-style-type: none"> <li>- Uncertainty in establishing the downstream costs (often unknown)</li> <li>- May treat all value stream costs as variable</li> </ul>

*Note.* Adapted from “Product Costing Systems: Finding the Right Approach”, J. G. Fisher & K. Krumwiede, 2012, *Journal of Corporate Accounting & Finance*, 23, pp. 43-51.

Table 16

*Advantages and Disadvantages of Costing Approaches Relating to Direct Cost Detail*

Methodologies to track direct product costs	Advantages	Disadvantages
Job costing	<ul style="list-style-type: none"> <li>- Accurate and appropriate when the product (or job) is unique</li> <li>- Generally considered to be a highly accurate costing system</li> </ul>	<ul style="list-style-type: none"> <li>- It can lead to unnecessary recordkeeping for costs that are common to all jobs</li> </ul>
Operation costing	<ul style="list-style-type: none"> <li>- Accurate and appropriate when products have certain unique costs but go through the same process</li> </ul>	<ul style="list-style-type: none"> <li>- Less accurate than job costing for costs that differ by type of jobs</li> <li>- More effort required than process costing</li> </ul>
Value stream costing	<ul style="list-style-type: none"> <li>- Supports lean manufacturing philosophy – often used with throughput costing</li> <li>- Saves time by not tracking costs for individual jobs or processes, rather it tracks revenues and costs by value stream</li> </ul>	<ul style="list-style-type: none"> <li>- Not appropriate if lean manufacturing strategy is not executed</li> <li>- Not as effective when the firm uses common resources and less cost control over individual processes</li> </ul>
Process costing	<ul style="list-style-type: none"> <li>- Accurate and appropriate when products, at the individual unit, are indistinguishable (same or similar products)</li> <li>- Considered to be the easiest and least costing method</li> </ul>	<ul style="list-style-type: none"> <li>- Not appropriate for products that are unique (job), as it does not capture unique costs</li> </ul>
Resource consumption accounting	<ul style="list-style-type: none"> <li>- Strong cost control as the responsibility for costs lies in cost center managers (work areas)</li> <li>- Highly accurate product cost information for short-term decisions</li> </ul>	<ul style="list-style-type: none"> <li>- Expensive to implement as typically requires of ERP systems</li> <li>- Can be difficult to understand due to its level of detail (the most complex method)</li> </ul>
Standard costing	<ul style="list-style-type: none"> <li>- One of the most traditional and largely used cost system</li> <li>- Flexibility to be used for cost control, budgeting and product pricing</li> <li>- Better use in production industries with permanently production</li> </ul>	<ul style="list-style-type: none"> <li>- It is based on a priori calculations of price and quantity, for which it is driven by experience and estimations</li> <li>- The assumptions of price and quantity may lead to inaccurate budgeting</li> <li>- The cost minimization approach might jeopardize important considerations for the product</li> </ul>

*Note.* Adapted from “Product Costing Systems: Finding the Right Approach”, J. G. Fisher & K. Krumwiede, 2012, *Journal of Corporate Accounting & Finance*, 23, pp. 43-51.

Table 17

*Advantages and Disadvantages of Costing Pools to Organize Indirect Costs*

Methodologies to organize indirect product costs	Advantages	Disadvantages
Plant wide cost pool	<ul style="list-style-type: none"> <li>- Simplest method to put in practice</li> <li>- Satisfactory results if all products consume indirect costs at the same rate</li> </ul>	<ul style="list-style-type: none"> <li>- The least accurate costing pool approach</li> <li>- Can lead to highly distorted costs if products are very different and differentiated</li> </ul>
Departmental cost pools	<ul style="list-style-type: none"> <li>- Still simple to put in practice</li> <li>- Recognize and distinguishes the differences in overhead costs among departments</li> <li>- More accurate than plant wide method</li> </ul>	<ul style="list-style-type: none"> <li>- Not as accurate to assign overhead costs to products compared to activity-based costing</li> </ul>
Time-driven ABC	<ul style="list-style-type: none"> <li>- Takes less resources and effort to implement compared to ABC (does not require accumulating costs by activity or tracking numerous cost driver data)</li> </ul>	<ul style="list-style-type: none"> <li>- Relies on estimations or, in the best case scenario, historical data of the time each activity was carried out (still resource consuming)</li> <li>- Not accurate if resources costs are not driven by time</li> </ul>
Activity-based costing	<ul style="list-style-type: none"> <li>- More accurate assignment of indirect costs than plant wide and departmental cost pools</li> <li>- Relies on cost drivers and activity cost rates that help in the decision making and management of the business</li> </ul>	<ul style="list-style-type: none"> <li>- Complex and relatively expensive to implement and maintain</li> </ul>
Detailed cost centers	<ul style="list-style-type: none"> <li>- The most accurate cost center approach, with a high degree of granularity</li> <li>- Cost center manager has responsibility for indirect costs</li> </ul>	<ul style="list-style-type: none"> <li>- The most expensive to implement and maintain as it relies in systems like ERP</li> <li>- Very detailed, which can be difficult to understand</li> </ul>

*Note.* Adapted from “Product Costing Systems: Finding the Right Approach”, J. G. Fisher & K. Krumwiede, 2012, *Journal of Corporate Accounting & Finance*, 23, pp. 43-51.

Table 18

*Advantages and Disadvantages of Drivers to Allocate Indirect Costs to Products*

Methodologies to allocate indirect costs to products	Advantages	Disadvantages
Volume-based drivers	<ul style="list-style-type: none"> <li>- The simplest driver to implement since it relies on the volume-based measures (e.g. units produced)</li> <li>- Works well with platwide cost pools (under the same assumptions)</li> </ul>	<ul style="list-style-type: none"> <li>- Assumes that products use the same amount of overhead (subsidization of products)</li> <li>- Non-volume related overhead might lead to distorted costs for the products</li> </ul>
Transaction-based drivers	<ul style="list-style-type: none"> <li>- Still simple and not expensive to implement</li> <li>- Works well when activities require for the same/similar amount of time and resources</li> </ul>	<ul style="list-style-type: none"> <li>- Not completely accurate as it assumes that the same quantity of resources are required every time an activity is performed</li> </ul>
Duration-based drivers	<ul style="list-style-type: none"> <li>- Useful for activities that are similar but with different performing times</li> </ul>	<ul style="list-style-type: none"> <li>- Expensive to set-up due to the time input requirements of the driver</li> </ul>
Intensity-based drivers	<ul style="list-style-type: none"> <li>- Due to its complexity, it works well for the most intricate activities</li> <li>- Accurately allocates indirect costs since resources are charged directly to activities and then to products</li> </ul>	<ul style="list-style-type: none"> <li>- The most complex driver to implement</li> <li>- Also the most expensive driver to implement and maintain</li> </ul>

*Note.* Adapted from “Product Costing Systems: Finding the Right Approach”, J. G. Fisher & K. Krumwiede, 2012, *Journal of Corporate Accounting & Finance*, 23, pp. 43-51.

## 6.2. Assessment of Alternatives

To perform the assessment of the solution alternatives, it was presented in chapter IV the most used multi-criteria decision methods available in the literature. It was also indicated that the present report would use the simple additive weighting for its clarity and wide use in business and financial management. Moreover, it was expanded the procedure that had to be followed based on the recommendations of the Department of Finance of the UK government

(2015, November 5). The methodology requires to identify the factors that are relevant for the project, in which case it was determined that the criteria should be based on the costs, benefits, effectiveness, feasibility, and ease of follow up of implementing the costing system into Amazona Chocolate. By using the criteria previously mentioned, it will be possible to evaluate the different proposed alternatives, thus leading to eliminate the infeasible solutions for the company, while coming up with the best solution to implement. These criteria are established according as follows:

**Cost.** This criterion involves the costs of implementing and maintaining the costing system in Amazona Chocolate's daily operations. The costs to be considered account for the resources that the company would have to invest in order to set-up and execute the costing system. The criterion is scaled between 1 to 5, considering 1 as too costly, and 5 as viable according to the firm's available resources. Further, cost criterion is assigned a weight of 25% since it is important to take into consideration that Amazona Chocolate looks for reducing its internal costs, for which the best costing methodology should not consume much resources from the company.

**Benefit.** This criterion aims to measure how beneficial would be the costing system on the operations of Amazona Chocolate. This criterion only considers the benefits and improvements that the company would achieve if the costing methodology would be implemented in its operations. For this reason, there is no consideration regarding the resources, capabilities and characteristics of the firm. The scale is once again considered to be between 1 to 5, with 1 as the option with the least amounts of benefits and improvements, and 5 with the most. The weight assigned for the benefit criterion is of 20%.

**Effectiveness.** This criterion will be used to measure the degree to which each solution will be successful to produce the desired result in the company. As it was explained in the literature review and also restated in the advantages and disadvantages tables, every

costing methodology is more effective according to the different characteristics of the company and its products. Based on this, this criterion is ranked from 1 to 5, considering 1 as the least effective method based on the characteristics of the operations and final products from Amazona Chocolate, and 5 as the most effective approach. Then, the weight assigned for effectiveness is also of 20%.

**Feasibility.** This criterion looks to evaluate the suitability and sustainability in the short to medium term of the implementation and execution of the costing system. It was not intended to measure the same criteria for the long term since it is known that Amazona Chocolate is still a small firm, for which most of its decisions have to be executed aiming at short, and medium term. The scale is between 1 to 5, considering 1 as too difficult to implement and to maintain in operation in the short to medium term, and 5 as the more suitable. Finally, a weight of 25% is given to this criterion since it is considered to be, along with the cost criterion, the most important for the firm. If the option is not feasible for the firm; then, there is no means to solve the problem.

**Ease of follow up.** This criterion aims to measure the degree in which the costing approach could be executed by an internal or external person from the company, meaning how complex and how much knowledge would be necessary to transfer to this person in order to be in charge, or at least be capable of follow and understand the internal costs of the company. The scale is again between 1 to 5, being 1 assigned for the option that would not allow an easy transition of knowledge, and 5 for the option that would be smooth and effortless. This criterion was considered since it was thought that in a short future, Amazona Chocolate will have to hire more collaborators as it is its aim to grow into a bigger and more structured company, especially if it is in its desire to start exporting to the external market. However, this criterion is not as important as the former ones, for which it was assigned the lowest weight, which is 10%.

It is important to mention that the criteria have been revised along with Amazona Chocolate's management team and they have been satisfied with the assigned weights, the grading scale and the general proposal. It is in these terms that, while taking into consideration the framework from Gurowka & Lawson (2007) which recommends to analyze the external and internal environment of the company (through the PESTE, Porter's five forces, and AMOFHIT analysis from Chapter I), the main problem that the company desires to solve, the advantages and disadvantages of the alternatives previously discussed, and the established criteria; a weighted scored analysis is performed in order to find out the costing system that best suits Amazona Chocolate. This assessment is presented in Tables 17-20.

Table 19

*Assessment of Methodologies to Assign Costs to Products*

Criteria	Weight	Throughput costing	Variable costing	Absorption costing	Life-cycle costing
Cost	25%	4	3	3	1
Benefit	20%	1	3	4	5
Effectiveness	20%	2	4	3	2
Feasibility	25%	4	4	4	2
Ease of follow up	10%	4	3	3	2
Total		3	3.45	3.45	2.35
Ranking		2	1	1	3

It can be seen in table 19 that both variable and absorption costing lead the ranking on the assessment of the methodologies to assign costs to products. This was expected since, as it was indicated in the literature review, and reinforced by table 15, throughput costing is a simplistic methodology, for which the cost criterion is the highest along with the ease of follow up. However, it is not even accepted for external reporting and it is also not appropriate for strategic decisions, but more suitable for just-in-time environments that wish to reduce inventory, for which its effectiveness score is also low. For these reasons, throughput costing receives the lowest score in the benefit criterion, as it is not the pursued



objective for Amazona Chocolate. In the case of Life-cycle costing, it is assigned the highest score for the benefit criterion as this costing methodology considers all the costs that are incurred in the lifespan of products, for which the cost of the product will be more accurately measured. However, this is a double-edge tool as it is complex to implement and resource demanding, thus the low scores assigned for the cost, feasibility, and ease of follow up criteria. Also, based on its characteristics, life-cycle costing is mainly used to evaluate the acquisition of assets that require a heavy investment, for which the emphasis is given on long-term planning. Due to these characteristics, the score given for effectiveness is also low. On the other hand, variable and absorption costing are given grades that hover between the middle scores as they are perceived to be the methodologies that fit better to the characteristics and necessities of Amazona Chocolate. They are not difficult, nor costly to implement; they are widely used and understood; while absorption costing is accepted by accounting standards, variable costing allows for break-even analysis, for which they can complement each other and provide a better assessment of the internal cost of the company.

Table 20

*Assessment of Methodologies to Track Direct Product Costs*

Criteria	Weight	Job costing	Operation costing	Value stream costing	Process costing	Resource consumption accounting	Standard costing
Cost	25%	3	3	2	4	1	3
Benefit	20%	3	3	4	3	5	4
Effectiveness	20%	2	2	2	4	5	3
Feasibility	25%	3	3	3	3	1	3
Ease of follow up	10%	2	3	2	4	1	4
Total		2.7	2.8	2.65	3.55	2.6	3.3
Ranking		4	3	5	1	6	2

Then, it can be seen in table 20 that process costing is the methodology to track direct aproduct costs with the highest score among the others. Based on the literature review and

table 16, it can be explained the reasons behind this outcome. Starting from the bottom of the ranking, resource consumption accounting has been assigned the lowest scores in cost, feasibility and ease of follow up due to its complexity based on identifying each of the resources consumed by the products instead of identifying the cost objects. Further, it is usually required to be supported by expensive systems like ERP. However, the assigned score for benefit and effectiveness is determined to be the highest since it is considered to provide a highly accurate cost information, and also is specifically useful for companies that desire to realize where their resources have to be improved, which is mostly linked to the problem that Amazona Chocolate is facing. Moving forward to the next methodology, job costing was assigned low score values on the ease of follow up and effectiveness criteria because this costing tool is better applied in companies whose products are very different one from another, which is not the case for Amazona Chocolate, as its products only change in the composition of cacao, for which applying this costing tool would be confusing for the employees and will not be effective. The scores for the rest of the criteria were defined to be in the middle of the scale because they have both advantages and disadvantages; for example, the benefit of job costing would have to be high as it is considered a highly accurate costing system; however, it can lead to unnecessary recordkeeping for costs that are similar in the products, which would most likely happen in the case of Amazona Chocolate. Then, value stream costing has been assigned low scores on the effectiveness, ease of follow up and cost criteria since the methodology is mostly used to support lean manufacturing philosophy, for which implementing this tool would require of resources to train the personnel in the lean philosophy, further it is not exactly the aim of Amazona Chocolate. However, if the resources were available, the benefit that this methodology could bring to the company are considered to be high, for which the score assigned is 4. Operation costing as a costing tool considered to be a hybrid between job and process costing, it is more appropriate when the products have

certain unique costs while going through the same process, as it is not the case in Amazona Chocolate's products the scores assigned were not high, especially for the effectiveness criterion. Finally, the higher overall scores are disputed between process and standard costing. Although standard costing is not considered among the framework in the framework of Fisher and Krumwiede (2012), it was decided to evaluate the costing methodology because of its tradition and large use over the years in the cost and management accounting fields. Standard costing was determined to bring more benefits to the company than process costing due to its flexibility. Standard costing can be used for cost control, budgeting and product pricing. However, process costing was considered to be less costly than standard costing based on the considerations of authors in recognizing that process costing is not only the easiest, but also the least costing method. Further, it was taken into account that standard costing is based on a priori calculations of price and quantity, for which its estimation approach might not bring the expected outcomes, for which the effectiveness score for standard costing is also lower than process costing.

Table 21

*Assessment of Methodologies to Organize Indirect Product Costs*

Criteria	Weight	Plantwide cost pool	Department cost pools	Time driven ABC	Activity based cost pools	Detailed cost centers
Cost	25%	5	4	3	2	1
Benefit	20%	1	3	4	4	5
Effectiveness	20%	3	3	4	4	5
Feasibility	25%	4	4	3	2	1
Ease of follow up	10%	5	5	4	3	1
Total		3.55	3.7	3.5	2.9	2.6
Ranking		2	1	3	4	5

Regarding the assessment of the methodologies to organize indirect product costs, it is seen from Table 21 that the approach with the lowest score is the detailed cost pool due to the demand of resources, complexity and high costs involved in its implementation. However, as also seen before, there would be high benefits for the company and a high rate of effectiveness in solving the problem, if this cost center would be implemented. A similar situation is seen for the activity-based cost pool. It is not as expensive nor complex as the detailed cost centers, however, the benefits and effectiveness are also not as remarkable as in the case of the detailed cost centers.

Then, time driven ABC is considered to be less expensive to implement and maintain than activity-based cost pools, however it still consumes resources as there must be someone that would have to be in charge of constantly being measuring the different activities performed in the company; otherwise, this information would have to be estimated or retrieved from historical data, if available. For these reason, cost and feasibility are assigned a middle score of 3. Finally, plantwide cost pools are the simples and cheapest way to organize indirect costs, and it could be fairly accurate if the products consume indirect costs at the same rate. For these reasons, it is assigned the highest scores on cost and ease of follow up, while assigning a 4 in feasibility and a 3 in effectiveness as Amazona Chocolate's products are not very differentiated among themselves. However, it is considered that departmental cost pools would be a better approach for organizing indirect costs for a company like Amazona Chocolate since it is considered to be much more accurate than plantwide cost pools, while having almost the same degree of complexity and cost (department might be slightly costlier to maintain, and just one bit more complex than plantwide cost pools, as there has to be a discrimination of indirect costs among the departments of the organization; however, it does not seem to be a big issue for Amazona Chocolate due to its size and participation in the value chain of its products). Based on these reasons, it is that department

cost pools takes the priority among the other methodologies to organize indirect product costs.

Table 22

*Assessment of Methodologies to Allocate Indirect Costs to Products*

Criteria	Weight	Volume based drivers	Transaction based drivers	Duration based drivers	Intensity based drivers
Cost	25%	5	4	3	1
Benefit	20%	1	3	4	5
Effectiveness	20%	2	4	4	2
Feasibility	25%	5	4	3	1
Ease of follow up	10%	5	3	3	1
Total		3.6	3.7	3.4	2
Ranking		2	1	3	4

Table 22 evaluated the methodologies to allocate indirect costs to product. Once again, based on the literature review and Table 18, it was assessed the advantages, disadvantages, and suitability of the different types of drivers for the characteristics and necessities of Amazona Chocolate. Starting with the intensity based drivers, they are recognized to be the most complex and expensive drivers to implement and maintain, for which its use is mostly limited for intricate activities. For these reasons, the score of benefit is high, while the rest are low. Then, for duration based drivers, the criteria of cost, feasibility and ease of follow up are considered to be middle as they would still be relatively difficult to maintain and to explain to an external person. Finally, for the volume based driver, the criteria of cost, feasibility and ease of follow up are the highest due to its simplicity; however, effectiveness and benefit score really low on this approach since there are great possibilities of distorting costs as this approach assumes that overhead is distributed proportionally to the volume of products produced. In this sense, it is determined that transaction based drivers would be the best approach for a company like Amazona Chocolate, as it is a simple and not

expensive driver to implement and maintain, however, the estimations are not as basic as the ones performed by the volume-based drivers.

### 6.3. Proposed Solution

The results of the assessment indicate that the costing system that will best suit the necessities and characteristics of Amazona Chocolate would be composed by a variable/consumption costing as the methodology to assign costs to products, then process costing to track direct product costs, next department cost pools to organize indirect product costs, and finally transaction based drivers as the approach to allocate indirect costs to products (Table 23).

Table 23

*Proposed Costing System Obtained Through the Weighted Scoring Assessment*

Aim of the costing system	Proposed solution
How to assign costs to products?	Variable/Absorption costing
How to track direct product costs?	Process costing
How to organize indirect product costs?	Department cost pools
How to allocate indirect costs to products?	Transaction based drivers

### 6.4. Conclusions

The present chapter has evaluated the alternatives proposed to solve the identified problem from Amazona Chocolate. As it has been indicated through the extension of the present report, the organization struggles to identify, allocate, control and monitor its internal costs. For this reason, the company and the consulting team agreed to develop a costing system that will best fit the characteristics, needs and available resources of the company. The costing system is based on the framework of Fisher and Krumwiede (2012), where they indicate that it should be composed by four major continuums, they are: (a) which costs should be included into the products, (b) what is the level of detail to track the direct product

costs, (c) how to organize indirect product costs, and (d) how to allocate indirect costs to products. To build the costing system, it was researched the wide variety of costing methodologies available in the literature. It was also identified the advantages and disadvantages of each costing tool in order to assess the structure that will be more suitable for the identified problem and the needs of the organization. Since there were several options available to implement the costing system, it was proposed to use a simple additive weighting (SAW) methodology. Based on a joint effort between the consulting team and the general manager of the company, it was identified the criteria along with its weights to perform the SAW. Finally, the proposed solution was chosen. It was identified that variable and absorption costing should be used to assign costs to the product, process costing to track the direct products, department cost pool to organize the indirect product costs, and transaction-based drivers to allocate the indirect costs to the products (see Table 23).

## Chapter VII: Implementation Plan & Key Success Factors

A theoretical plan on paper could look very interesting and could seem like the perfect solution, but it is nothing if it does not come with a proper implementation plan. The following chapter will explain how the proposed solution from Chapter VI can be implemented in Amazona Chocolate's finance and accounting department to solve the problem stated in Chapter II.

To quickly recap, Amazona Chocolate wants to control and decrease its internal costs to become more competitive in its niche market. To do so, it needs to establish a proper costing method within its organization. Chapter VI suggested that Amazona Chocolate should use a combination of four different costing approaches to build a costing system that best suits its necessities and characteristics, with the aim to track and control the costs regarding its internal processes. Implementing this solution will bring several benefits for the company because it will be able to track, analyze, and control its internal costs to properly assess them and actively reduce them when the collected data shows opportunities.

Since it is important to properly execute the implementation plan, it has been divided into three different phases and within each of them their own set of steps to follow. These steps will be as detailed as possible to make it practical and easy to understand. This will include a calendar of activities to be executed in a specific order. Therefore, the main goal of the consultancy team is to provide the company with a detailed plan that will allow the firm to properly implement and start working with the new costing system. The plan will be tailored to the company's culture and resources, and to make it more relatable, each activity will be assigned a person responsible, either an employee or stakeholder in general, to execute it and control. All possible scenarios will be considered and run through.

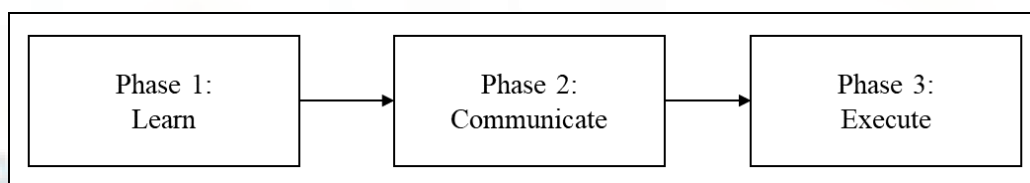
**Note.** This implementation plan is not a bible. Whenever the company or the consultancy team feel that some parts of the process need to be adjusted, there is room for



that. This plan aims to provide both parties with a guideline to properly and easily implement the costing system.

### 7.1. Activities – the three phases and its underlying steps

As discussed earlier, the implementation plan will be based on three chronological phases, from which each of them will have its individual steps to be followed. The overview of the three phases can be seen in the table underneath this paragraph. It is the basis guideline for all the steps that are part of the process.



*Figure 24.* The three phases of the implementation process.

The first phase is called the “learning” phase. This phase is aimed to educate the main stakeholders, focusing on the general manager (Vilsic) and the warehouse manager (Miguel). They should know what the system includes and what that means. The second phase will focus on communication, ‘who else should know?’, ‘how are they going to track the details?’, ‘which reporting structures need to be renewed?’. The last phase will aim to tackle the actual execution of the plan, ‘what can we identify?’, ‘what costs do we find?’, and most of all, ‘which area takes most of the costs?’, and ‘how can we reduce that?’. All three stages will be extensively explained in the following paragraphs.

***Phase 1 - Learn.*** The first phase is an important one. The key objective in this phase is to familiarize the main stakeholders with the topic; the costing system. This is important because the consultancy team will be abroad and not being able to physically be present at the company side to help the stakeholders and participate in the process. The team will be available for questions via e-mail or WhatsApp, but actively participating in the implementation process as it was discussed to be a key objective of this consultancy project.

Therefore, the first few weeks of the implementation plan will focus on the topic. ‘What does the costing system do?’, ‘what does it mean?’, ‘how does it work?’, ‘do I have to change my mindset?’, ‘what is my role in this?’. These are all questions that the main stakeholders, Vilsic and Miguel, should know in order to properly implement the costing system. Since the company is relying on both managers, they are extremely occupied running the day-to-day activities in the company. For this reason, it is recommended that both Vilsic and Miguel spend the first month of implementation every Tuesday and Thursday afternoon about two to three hours reading this report (chapter 3-4-5-6) to properly understand what the system is about. Not too many hours, but enough to remain motivated and continue progressing.

After that, they should research the internet and learn more about the topic. Financial systems can be vague and hard to understand, so the more the stakeholders know, the easier it will be to understand and implement it. It is also key to research a lot, since it will be easier to continue to be motivated. One will see the benefits of the systems and will be more motivated to implement the system. If stakeholders, Miguel and Vilsic, still have questions after the period of research and familiarizing with the report, they can approach the team with some further questions. Also, if the stakeholders want to organize a kick-off meeting or an introductory lecture about the costing system, they could ask the team, and the consultants will be able to schedule it during the first week of the implementation.

One month seems a long time to get familiar with the topic, but as explained earlier, both stakeholders are extremely busy, so 4-6 hours a week is already quite an exercise to arrange. Depending on the hurry of the firm to obtain quick responses and solutions, then this first phase could be altered to shorten the times of implementation; however, it should not exceed what the consultancy team has estimated as it could lead to an abandonment of the project. It is known that the slower the pace on the implementation, the feasibility of success for the implementation system will increase, which goes hand by hand with the availability of

Amazona Chocolate's resources and human capital. For which, considering the fact that the company is limited by its size and resources, then, it was thought to be better not to take too much time for the work related to this topic. Also, the days for executing the activity should be flexible. Since Mondays and Fridays are usually busy days for the firm (these are the before and after days from the feria markets) then, it was better decided to go for Tuesdays and Thursdays, but if stakeholders prefer to spend time on other days, that is perfectly fine, it should be flexible and comply with the stakeholder's schedules. However, it is still recommended to stick to the 4-6 hours per week.

Table 24

*Phase 1 – Learn. Agenda with Activities and Control Boxes*

Day-Date	Activity	Stakeholders	Done
Tuesday	Chapter 7 + online research + (kick-off meeting if needed)	Vilsic - Miguel	<input type="checkbox"/>
Thursday	Chapter 1-2 + online research	Vilsic - Miguel	<input type="checkbox"/>
Tuesday	Chapter 3-4 + online research	Vilsic - Miguel	<input type="checkbox"/>
Thursday	Chapter 5-6 + online research	Vilsic - Miguel	<input type="checkbox"/>
Tuesday	Chapter 3-4-5-6 + online research + familiarize with Excel sheets and structures	Vilsic - Miguel	<input type="checkbox"/>
Thursday	Chapter 8-9 + online research	Vilsic - Miguel	<input type="checkbox"/>
Tuesday	Revision + online research + asking experts	Vilsic - Miguel	<input type="checkbox"/>
Thursday	Revision + clarification + asking the team	Vilsic - Miguel	<input type="checkbox"/>

*Note.* Activities have been indicated as days, and not as specific dates. This allows the team to begin with the execution of the implementation plan whenever they are ready for it.

An overview of all the activities that should be performed in the first month of the implementation can be found in Table 24. Besides providing the agenda, it also allows the participants to keep track of their activities by ticking the boxes in the last column. It is going to be a challenging first month since all new knowledge needs to be obtained; but it will come with guaranteed results, especially if the extra online research is properly done.

Valuable and practical information can be obtained from sources such as YouTube. This

makes studying lighter and more pleasant. After doing this for a month, both Vilsic and Miguel should be able to continue with the next steps of the implementation plan.

**Phase 2 - Communicate.** Phase two is fairly easy and can be executed in a relatively short period of time. This phase includes the sharing of the information. Both Vilsic and Miguel are educated about the topic now and can share this information with the company. All employees should know what is going on since all employees are going to be affected by the changes and the activities.

The best way to do this is to organize two meetings in the week after the first phase. For a systematic approach, it is suggested to organize them on Tuesday and Thursday afternoon, for about one to two hours. In these meetings, both Vilsic and Miguel will explain to the Amazona Chocolate team what is going on. They will explain what is going to happen, but most importantly WHY it is going to happen. This is necessary because the employees should know what they have to change and what the benefits are. If they do not know, change management is going to be difficult, which will eventually lead to the deficient implementation of the plan. It is suggested to start the first meeting introducing the problem that is going to be solved together, as the team that is Amazona Chocolate. Then, it should be explained how they are going to do this, basically, the costing system and which activities, responsibilities and routine of work will have to be modified. Key is to create a sense of urgency, show them why it is important because this will improve the likelihood of success of the plan (Kotter, 2012). The meeting will focus on the theoretical part of the process.

The second meeting, on Thursday, will focus on the practical part of the implementation process. The consultancy team has provided the company with different Excel sheets that can be used to track the internal costs based on the proposed costing system. This meeting can go over the models and should explain what should be filled in, where, and why. Also, this meeting should make clear that the model has to be filled out frequently.

More details regarding the spreadsheets and its execution will be discussed in phase three, but it is important to already stretch this idea since the accuracy of the data will make or break the deal on the way to better understand the costs of the company. Underneath this paragraph, it can be found the overview of the activities to be done in phase two. The agenda shows the time indications and the activities attached to it. The agenda can again be used as a tool to check the progress of the implementation plan, by ticking the boxes.

Table 25

*Phase 2 – Communicate. Agenda with Activities and Control Boxes*

Day-Date	Activity	Stakeholders	Done
Tuesday	Theoretical meeting: introduce the model to the employees and discuss what is going to change, what people will have to do and why.	Vilsic, Miguel, and team	<input type="checkbox"/>
Thursday	Practical meeting: introduce the Excel models to the employees and show what needs to be done and when. Also organize an afternoon in which they can go over the historical data.	Vilsic, Miguel, and team	<input type="checkbox"/>

*Note.* Activities have been indicated as days, and not as specific dates. This allows the team to begin with the execution of the implementation plan whenever they are ready for it.

Phase two seems short and relatively easy, but it should not be underestimated. This phase is critical for establishing a pro-active attitude and mindset for the employees. If the plan is communicated with the employees and explained correctly, the likelihood of them taking it and working hard for it increases. It will be good for motivational purposes since they will live the system and do everything it takes to implement it perfectly; they feel involved and make the problem to be their own problem.

**Phase 3: Execute.** The last phase is the most practical, but at the same time, the most important phase. This is where everything is going to happen. The proper implementation of this part of the plan will provide the company with the results needed to improve Amazona Chocolate's internal costs. Proper standards on measuring, collecting, organizing, analyzing, and controlling should be in place. These five verbs will be key in discussing this

implementation plan. The goal will be achieved if it can be implemented a structure and a standard that takes care of all these verbs in the upcoming few weeks.

*Step 1.* Phase three will be organized into four different steps. In the first two weeks, the team will start to fill the Excel sheets provided by the consultancy team. Important to note here is that the sheets are already filled with the scarce data that were collected by the consultancy team, which has also been supplemented by some estimates that the company provided. The objective in these first two weeks is to start filling the data. Critical questions that should be asked here are: ‘are we collecting the right data?’, ‘are we filling the data into the correct rows and columns?’, and ‘do we think that we can work this data?’.

It is important to collect as much data as possible. If one cannot measure a particular data point, the team should come up with a sheet or a tool to measure it and collect it because all the data points in the provided Excel need to be collected and filled out in order to properly follow the costing system and get the correct results for the control and reduction of the internal costs.

*Step 2.* Once the two weeks have passed and the team has filled out the Excel sheets. It is time to start analyzing and using the calculation tools provided in the same spreadsheets, step two of the third phase. Analyzing will take some time since the stakeholders need to get familiar with the tools. Playing with the numbers and the tools will give the company sufficient insight regarding the costs, but also the insight into the functioning of the tool. Important here is that the stakeholders should not be afraid to make mistakes. This part of the process is designed to learn. One could play with the sheets and see what happens to the numbers, as it has to be remembered that the costing system is just a tool to improve the decision-making of the company.

Once the stakeholders know how to analyze the data it is time to look at what it has to say. The cost system is designed to show costs that a normal bookkeeping system would not

show. The analysis should open eyes in the company since the previously unknown cost is now revealed. The gained knowledge about the cost should be remembered and studied so one can take appropriate measures to reduce them. As the main objective was stated, if the costs are not known, then there is no way to improve on them, but if they do are known, then it is easy to reduce them. This sheet tools will allow the firm to do so.

*Step 3.* Step three of the third phase is focused on controlling. So far, data have been collected and analyzed. So, topics and costs on which to focus and work on should have already been encountered by this point, and then it is possible to take decisions to improve on them. What is left to do from this point is to check whether the firm is satisfied with the knowledge collected. They should ask, ‘do we want to collect data in other areas as well?’, ‘do we need to expand our excel sheet?’, or ‘do we need to do the opposite and take out some collection points?’, or ‘have we found enough opportunities to reduce our costs?’. That is the key objective for performing this exercise. The team should be very critical here but continue to follow the standard. One could decide to decrease the amount of work performed and filled into the costing system because it will give less resource and time demanding, but it will also give you fewer insights. On the other hand, one could also decide to increase the amount of data to be collected, but important then is to remember that too much data could create troubles analyzing it meaning that you will not get the correct results. So, at the bottom line, there is again a trade-off between the accuracy and quality of the information filled and obtained from the costing system.

*Step 4.* The last step of the last phase is continuous improvement. Now it is known what to measure, how to measure it, how to collect it, how to organize it, how to analyze it, and how to control it. The most important matter now is to continue doing so. The company should repeat the process over and over to continuously look for cost improvements. This is where the implementation plan stops and where the real-world standards and structures

continue. Now, it is not a new tool anymore, but a standard working procedure. The team would need to collect costs regarding products, direct products costs, indirect product costs, and all costs related to this. Examples that have been shown in the excel sheet are warehouse numbers, sales numbers, factory costs, transportation costs. Recommended here is to do the collecting and organizing of the data on Mondays and Fridays. These are the days when most of the products leave to the markets and come back from the markets. It is the best opportunity for executing this because it will happen almost automatically. It will become a habit, pack products and track products, track products and pack products. Analysis and continuous improvement can be done by Vilsic and Miguel on the other days of the week. They can see which data has been collected, what it indicates, and how they can improve. Also, the maintenance of the tool can be dealt with in the days in-between.

Table 26

*Phase 3 – Execute. Agenda with Activities and Control Boxes*

Week	Activity	Stakeholders	Done
Week 1-2	Collecting: These weeks are reserved for collecting data. Provided spreadsheets can be filled out. Objective to get as much data as possible.	Vilsic, Miguel, and team	<input type="checkbox"/>
Week 3-4	Analyzing: Analyze the collected data. Get familiar with the tools used to assess the data. Act on the knowledge gained.	Vilsic, Miguel, and team	<input type="checkbox"/>
Week 5-6	Controlling. See what the data collection and analysis has brought for the company. Answer to ‘do we need to increase or decrease the amount of data points we are measuring?’	Vilsic, Miguel, and team	<input type="checkbox"/>
Week 7-x	Continuous improvement is key in maintaining a tool for cost analysis. Company activities and cost centers change, so tools need to be adjusted for that. Continuous learning is key.	Vilsic, Miguel, and team	<input type="checkbox"/>

*Note.* Activities have been indicated per week and not per specific date. This allows the team to begin with the execution of the implementation plan whenever they are ready for it as a continuation of the previous steps.

The data discussed can be found in the table underneath. The four steps of phase three are shown with the checkboxes on the side, so they can be ticked when the activity has been executed. Also, Table 27 shows the regular standard and structure for dealing with the data.



This is not part of the implementation plan anymore as it supposed to be the agenda for continuous improvement.

Table 27

*Phase 3 – Execute. Weekly Agenda for Continous Improvement*

Day	Activity	Stakeholder	Done
Monday	Measure, collect and organize data	Team	<input type="checkbox"/>
Tue-Wed-Thu	Analyze, control, and improve	Vilsic - Miguel	<input type="checkbox"/>
Friday	Measure, collect and organize data	Team	<input type="checkbox"/>

## 7.2. Implementation Gantt Chart

This paragraph will once again show an overview of the implementation plan. One could start at the top of the table and work its way down by executing the activities and ticking the boxes (see Table 28). Important is to do it with the entire team. Other tips and trick have been described in the previous paragraphs. A detailed Gantt chart describing the activities can be found in the Appendix C of the present report.

## 7.3. Key Success Factors

To successfully implement all the suggested changes effectively and efficiently, it is key for the organization and the consultancy team to identify several so-called enablers and risks. One could see it as a list of factors that might influence to company to do either very well or very bad. During the implementation process the team should take these factors into consideration.

Enablers are the factors that are required for the process to be successful. If these enablers are in place, the project has a significantly higher chance of performing well and becoming a success. On the other hand, we have the risks. These are the factors that the team needs to control as well since they could be detrimental to the success of the project.

Table 28

*Overview of the Implementation Plan*

Phase	Day-Date	Activity	Stakeholders	Done
1	Wk1 Tuesday	Chapter 7 + online research + (kick-off meeting if needed)	Vilsic - Miguel	<input type="checkbox"/>
1	Wk1 Thursday	Chapter 1-2 + online research	Vilsic - Miguel	<input type="checkbox"/>
1	Wk2 Tuesday	Chapter 3-4 + online research	Vilsic - Miguel	<input type="checkbox"/>
1	Wk2 Thursday	Chapter 5-6 + online research	Vilsic - Miguel	<input type="checkbox"/>
1	Wk3 Tuesday	Chapter 3-4-5-6 + online research	Vilsic - Miguel	<input type="checkbox"/>
1	Wk3 Thursday	Chapter 8-9 + online research	Vilsic - Miguel	<input type="checkbox"/>
1	Wk4 Tuesday	Revision + online research + asking experts	Vilsic - Miguel	<input type="checkbox"/>
1	Wk4 Thursday	Revision + clarification + asking the team	Vilsic - Miguel	<input type="checkbox"/>
2	Wk5 Tuesday	Theoretical meeting: introduce the model to the employees and discuss what we are going to do and why.	Vilsic, Miguel, and team	<input type="checkbox"/>
2	Wk 5 Thursday	Practical meeting: introduce the Excel models to the employees and show what needs to be done when.	Vilsic, Miguel, and team	<input type="checkbox"/>
3	Wk6-7 <i>Week 1-2</i>	Collecting: These weeks are reserved for collecting data. Provide Excel sheets can be filled out. Objective to get as much data as possible.	Vilsic, Miguel, and team	<input type="checkbox"/>
3	Wk8-9 <i>Week 3-4</i>	Analyzing: Analyze the collected data. Get familiar with the tools used to assess the data. Act on the knowledge gained.	Vilsic, Miguel, and team	<input type="checkbox"/>
3	Wk10-11 <i>Week 5-6</i>	Controlling. See what the data collection and analysis has brought for the company. Do we need to increase or decrease the amount of datapoints we are measuring?	Vilsic, Miguel, and team	<input type="checkbox"/>
3	Wk12-x <i>Week 7-x</i>	Continuous improvement is key in maintaining a tool for cost analysis. Company activities and cost centers change, so tools need to be adjusted for that. Continuous learning is key.	Vilsic, Miguel, and team	<input type="checkbox"/>

This paragraph will go over a list of risks and enablers that will potentially have the biggest effect on the company and the implementation process. First, the enablers will be discussed. What are they and how can we ensure that we have them in place? Second, we will

look at the risks. Which risks might negatively influence the implementation process and how can we prevent them from doing so?

***Enablers for a successful implementation.*** Enablers are, as discussed above, very important. Without them the project will be hard to execute. One of the important enablers here is commitment. Commitment from the management, from the employees, and from the consultancy team. A fully committed group can do wonders. Ways to commit all the stakeholders is to actively involve and engage them in the process: ‘what is it that we are doing?’, ‘why are we doing it?’. If one can see what the future benefits will be, it is easier to commit yourself and work hard. Communication is also important here, the entire team should communicate, update, and share information. Even the smallest bit of information should be shared and celebrated, because it is part of the newly uncovered internal costs.

Acceptance of change and an active attitude towards learning about the new tool are also two important enablers for the project. The team should be open to learn and see the change that will help the company grow. Education and communication are key factors to ensure this. The benefits of the new tool should be extensively discussed. It is easier for someone to work on something it believes in. Also regarding change, if it comes in a logical and understandable way, one is much more will to engage and understand what is going on.

Lastly, enthusiasm and a hunger for accuracy. If the team can convert the message to the employees in a positive and fun way, they will be willing to help us and be loyal. If the driver forces do not even like the tool, the employees will take over this attitude. Motivation and incentives could work here. Once an Excel sheet is filled out properly, the team should celebrate that. It will foster further interest and motivate the employees to go the extra mile. More about the enablers and the best ways to ensure them can be found in Table 29. The table has been constructed by the consultancy team and consists of all the major enablers for the proper implementation of the new tool.

Table 29

*Enablers for the Success of the Implementation Plan and How to Ensure Them*

Enablers	How to ensure them
General manager's commitment.	Actively involve the manager in the process and educate them about the benefits.
Staff's involvement and commitment.	Actively communicate with the team and involve and educate them.
The commitment of the consultancy team.	The consultancy team should not disappear after final delivery but should continue to participate in the process.
Enthusiastic consultancy team to convert message.	Implementation is not easy, so the team should keep up the spirit to motivate all the stakeholders to reach the objectives
Acceptance of change.	Educate and communicate, change is fine, but it needs to come in a logical and understandable way for everybody.
Hunger for accuracy and completeness of data.	Show what the data can do. If one sees all the benefits of a perfectly organized dataset, one will to do all it takes to keep it perfect.
Active attitude towards learning about the tools.	Educate in a fun way and show the benefits. If one sees what education can do for the company, one will continue to be positive in working with the tool.

***Risks that could hinder the implementation plan.*** Once all the enablers are set, it is important to look at the risks. Which factors might occur during the implementation and negatively influence the outcome? One of the important risks is unsatisfactory results from the tool and neglecting the results. It might happen that the firm could encounter few potential areas for cost reduction compared to what they expected to find. This can be a disappointment and lead to the termination of the plan; however, they should stay involved. It might bring more results in the future. Something that goes hand in hand with this, is that the tool might show improvements in areas the management does not want to change anything. If the improvements do not the managerial vision and just do not go well with the general manager's expectations, they might be ignored. Ways to prevent this from happening is to explain that the results are not a personal attack, they are opportunities. The tool shines light in new, previously unknown, areas. Also, if the Excel sheets are filled out perfectly, they will

show good and clear outcomes. It will be hard to ignore and neglect, since they will show large opportunities for better internal costs.

Emotional attachment to current tools and reluctance to change are also two risks that we should take into consideration. The manager and the team might be attached to the current way of working, which is understandable. However, the new tool will bring better results. This should be extensively discussed during the meetings. Slow implementation, good communication, showing the benefits should help the employees to be motivated to change and leave the old system behind. Incentives and celebrations might help here as well to minimize these risks.

Thirdly, lack of resources and lack of guidance are also important risks to consider. The consultancy will only be slightly involved in the implementation process. The team will have to do it themselves. If they get stuck and there is no one to ask questions to, they might stop and focus on other things. Continuous guidance and good processes are therefore key to minimize these risks. Also, regarding resources, the company should continue to invest time, people, and money into the project. It does not take a lot of human capital, nor money to implement and maintain the tool, but there should be continuous focus from the management. Showing the benefits and results will definitely help to keep this focus and minimize the risks.

Lastly there is miscommunication. The team should continue to work with the Excel sheets provided by the company. Also, the meetings, procedures, and structures should be continued to be used. If parts of the team start to work on different topics and with different Excel standards, this might lead to confusion. Or, even worse, lead to misleading results. A strong focus from the team and the management should therefore be on the continuation of the use of the Excel sheets and the structures provided. This will decrease the chance of miscommunication. More about the risks and the best ways to prevent them can be found in

Table 30. The table has been constructed by the team and is tailored to the company and the implementation process.

Table 30

*Risks that Hinders the Success of the Implementation Plan and How to Prevent Them*

Risks	How to prevent them
Unsatisfactory results from the tool analysis	Explaining that negative results are not a personal attack. It is an opportunity. The new tool will shine a light on costs we have never seen before.
Emotional attachment to current methods and practices	Stop using the current practices and slowly move towards the new tools. One will realize they show more info and will continue to work on it.
Reluctance to change	There will always be someone against the new tool. Consistent explanations and showing the benefits should minimize this risk.
Lack of resources to continue to commit (human capital, finances, time, etc.)	The tool is not expensive, they only thing the project need is manpower. Dedicated employees should not spend more than 2 hours per week.
Neglecting the benefits	Excel sheets should show data and analysis. The clearer the better, since it will be harder to neglect the conclusions.
Lack of guidance	The team should remain involved. Once left it might be easy to fall back to the old system once life gets difficult. Regular contact should minimize this.
Miscommunication	Use the Excel sheets provided by the team. Do not use your own, this will create confusion and different standards. One tool and regular meetings will minimize this risk.

#### 7.4. Conclusions

The present chapter proposed a plan to successfully implement the costing system into Amazona Chocolate's operations. To do this, it was indicated that the process should be composed of three phases: learn, communicate and execute. The learning phase is based on a process of education and consulting. The stakeholders must get involved with all the research, recommendations and tools provided by the consulting team. The second phase is about letting the rest of the Amazona Chocolate' team know what the new project of

implementation will be about and how things would change for better in the organization. This is an important phase for the success of the project since there is always a degree of rejection and hesitation during change. Finally, the last phase is about the actual execution of what has tools and recommendations. The proposed implementation plan estimates a total period of execution of 12 weeks divided into the three main phases. It is not considered any cost of implementation since the evaluation of the costing system took into account the limited resources of the company, nonetheless, it is recommended to assign a person to execute the process of digitalization of the information, for which it was estimated a period of 15 days and an investment of S/800 to finish this work.

Additionally, enablers and risks were identified as the key success factors for implementation. For the enablers, it was indicated the correct way to ensure them, while for the risks, it was indicated the best way to prevent them. The most important enablers for the implementation plan were the commitment of the stakeholder as well as its involvement in the plan, the acceptance for change of the employees, the hunger for accuracy and completeness of data, and the active attitude towards learning. On the other hand, the risks of concern for the proposed plan are to face unsatisfactory results that detriment the commitment of the organization, the emotional attachment to the current methods, which is linked to the reluctance to change, neglecting the benefits of the costing system, and miscommunication.

## Chapter VIII: Expected Outcomes

The present chapter will touch upon the different outcomes that will result from the successful implementation of the plan proposed in Chapter VII for Amazona Chocolate. These results should be evaluated and presented in both qualitative and quantitative manners. In regards to the qualitative results, it will be listed the expected improvements that will be seen in the operations of the company; however, concerning the quantitative results, as it has been pointed out throughout the report, the scarce data available and the lack of historical information regarding sales, inventory and production, results in a constraint for the consulting report. For this reason, the best aim would be to indicate what is expected for Amazona Chocolate to obtain by implementing the costing system in its daily operations, but not referring to actual expected numbers.

### 8.1. Qualitative Outcomes

**Improved decision-making.** By implementing the costing system, it is expected that the decision-makers of Amazona Chocolate will better understand the internal costs of the products offered by the firm. This would allow them to evaluate under more accurate figures important decisions such as replacing input materials, acquiring different suppliers, replacing labor for investment in machinery and technology, outsourcing more activities, or maybe stop outsourcing and engage further into the activities from its value chain, etc. This expected outcome is envisioned since there are many improvements that the firm should be willing to implement in the medium to long future. During the meetings held with the management department of Amazona Chocolate, it was brought into the table the possibility of expanding operations abroad, invest in production facilities, look for better prices for certain outsource activities, outsource the packaging activities, among others. Although the company had several potential ideas for improvement, they felt to be limited by the uncertainty of how much were they spending with is the current setting of its operations. Thus, the



implementation of the costing system will provide the information necessary to take important decisions such as the abovementioned.

**Cost reduction.** The better understanding of the internal costs which leads to an improved decision making has the objective, among others, to reduce the costs associated with the fabrication of the final product. It will be possible to recognize the resources and processes that consume the highest percentage of the total cost of the product. By doing so, it will be possible to assess the possibility of adjusting and improving the costs associated with these very consuming costs. For example, Chapter IV analyzed the internal costs in the fabrication of Amazona Chocolate's iconic products. Although the evaluation will have to be revised again by the firm and update the numbers according to the actual spending, it was estimated that the biggest costs are incurred in the acquisition of the raw materials (especially cacao) and in the processing to obtain the chocolate. By knowing this information, it is possible for the firm to establish negotiations to reduce the costs incurred in these stages of its value chain. Since the firm works under a scheme of collaboration, it is possible that it would not be possible to reduce much more the costs unless there is a commitment that also benefits the collaborators. It could be achieved by requesting larger volumes of cacao, which would also lead to higher orders of productions. This would only be possible if the operations of the firm are expanded which would be achievable by investing the savings coming from the efficiency of its operations based on the improvement and control of its costs.

**Updated information.** Since it is indispensable to keep constant recorded information regarding sales, inventory and production requirements to run the costing system, then it will be possible for Amazona Chocolate to have any time, at disposal, up to date information. The updated information has the potential to be used for many other purposes such as consumer behavior and preference statistics, forecast of future demand, planning of budgeting for future periods, investment plans, among others.

***Order, planning and control.*** Once again, the tracking and recording of the information from the activities of the company will put in order the operations of Amazona Chocolate. A brief evaluation of the statistic behavior of the running of the business will enable the decision of what are the changes that have to be done to be more effective in its operations. Also, as to abovementioned, the costing system plus the updated information have the potential to serve other purposes, such as planning and control. By having the figures and numbers regarding costs per products and production, inventory and sales information, then it is possible to start controlling the costs of next periods by creating budgets that specify the assigned resources and the person responsible for controlling those expenditures. This is one step further into becoming more competitive since having control of costs facilitates the achievement of making the expected profits.

***Creation of a cost control culture.*** Start a cost control program within a company and command directives to the employees from the firm, if executed as it was suggested in the implementation plan, will become part of the regular activities of the company, and with time, will be incorporated inside the mindset of the employees, thus becoming part of the culture of the firm. The expected outcome is that employees will follow this culture and will start to find ways to eliminate waste and improve the operations of the firm.

***Identification of profitability in the product mix.*** The implementation of the costing system will also provide meaningful information regarding the profitability of the products. This is an important concern for the company since Amazona Chocolate offers a wide array of products in very different presentations. As it was pointed out throughout the report, having this diversity of products can be seen from two perspectives. The first one is based on a strategic analysis which has a strong focus on the preferences of customers. Although the product is not very profitable, it helps the company to satisfy a bigger share of the market, thus making its products better known; however, it is important to support this analysis with

an evaluation of the actual preferences of the customer – through the study of the sales per product, or with surveys as best-case scenario. But to truly know the profitability of the product, it is necessary to know the costs incurred in its production, which is enabled by the costing system. It is through these means that the second approach comes into evaluation, which strongly focuses on the costs of the product, and will allow identifying if there are products that are cannibalizing the profits from other products.

***Improve competitiveness.*** It is expected that Amazona Chocolate will improve its competitiveness by improving and then maintaining efficient operations. Reducing and controlling costs is considered to bring competitiveness in the firm since the savings should be used to incorporate investments in strategic areas for the growth of the firm, for example, better capital equipment, bigger marketing campaign, market studies to expand operations, investment to open its own processing plant, etc. The savings should be spent on any meaningful improvement that will make the company grow in its industry.

## **8.2. Quantitative Outcomes**

As part of the expected quantitative outcomes, the following part of Chapter VIII will introduce some key performance indicators that Amazona Chocolate would have to keep track of in order to control the efficiency of its operations based on the recommendations of implementing the costing system.

***Operating margin.*** The operating margin measures how much of the revenues are left after incurring on the main costs of a firm, mainly the operative costs. It is an interesting figure to keep track of since it evaluates the performance of the operations of the firm as it is obtained through the operating income, which in contrast with other figures such as EBIT (earnings before income and taxes), it does not include other sources of income non-related to the core operations of the firm. The operating margin is obtained by dividing the operation income by the revenues of the firm in a specific period, while the operating income is

obtained by subtracting all the costs and expenses related to the operations of the firm from its income in a period of time. Among the subtracted expenses, it has to be included the costs of goods sold, wages, depreciation, selling and general administrative expenses, plus any other expense related to the operations of the firm. To pursue competitiveness, it is expected that Amazona Chocolate can increase its operating margin period by period. While it is certain that it can be achieved by increasing sales, the figure could not increase notably if costs are not properly controlled. Even, operating margin could be further improved by a reduction in costs.

***Variation in operating income.*** Another figure that should be used to keep track of the efficiency of the firm is how much has the operating income changed from period to period (it is usually measured quarterly or annually, but also monthly). Based on the same premises stated for the operating margin, the operating income is expected to increase over the periods after the implementation of the costing system, for which the aim is to obtain variation higher than 0 (operating income from current period - operating income from previous period divided by the operating income from previous period). Once again, this performance indicator could be enhanced by an improvement of sales, however, cost planning and control will be important resources for the achievement of this objective, as costs will also increase by the increase of revenues, but if properly controlled, then the income will be higher than the investment.

***Variation of the expected budget.*** As part of the implementation of the costing system, Amazona Chocolate can start to implement budgets that will have to be supported by a forecasting evaluation of the demand, which will also be possible based on the up to date information. The budgeting process can be referred to estimate and control the expenditures for procurement of raw materials, production requests and inventory capacity. It is expected that the firm can initiate this procedure, and improve the accuracy of its budgets over the

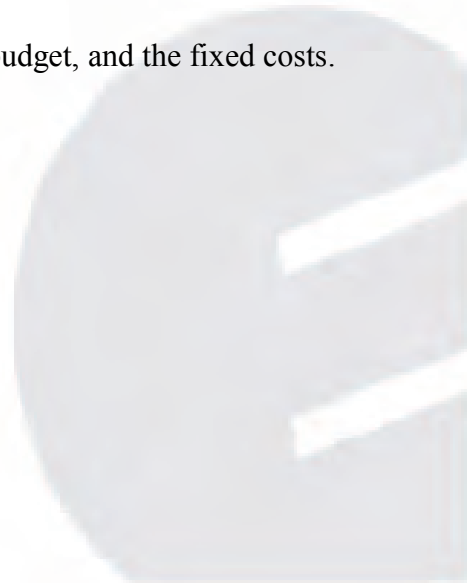
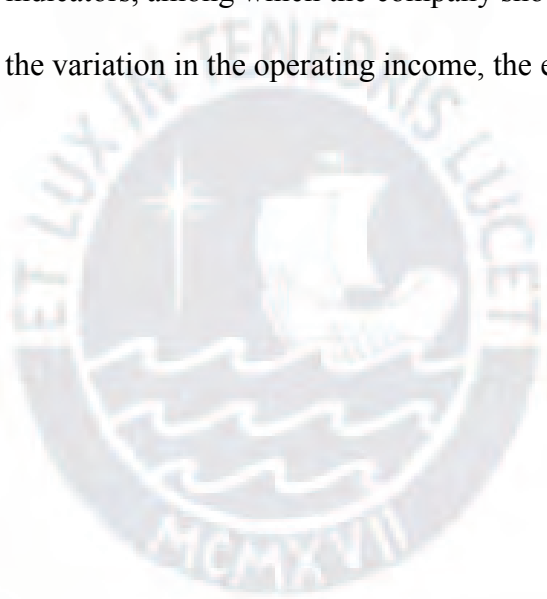
periods. Moreover, the figure should reach values close to 0 while aiming not to be a negative value based on the following formula:  $(\text{planned budget} - \text{actual budget})/\text{planned budget}$ . If the planned budget is equal or close to the actual budget the value would be close to 0%, which would mean that there was a high degree of accuracy in the budgeting process. However, in case the budget was not accurate enough, it would be better not to spend more than the estimated resources that were planned to invest since the beginning, for which the figure should not be negative.

**Variation in fixed costs.** The last performance indicator that Amazona Chocolate should be keeping track of is the variation in fixed costs. As it is known, fixed costs do not increase with a rise in the rate of production. For this reason, it is expected that fixed costs remain equal, or at least similar, over the periods. By analyzing the variation in fixed costs, it could be identified which expenditures increased from one period to another, or what were the spendings that had to be done in the current period that were not necessary for previous ones. Once again, in this case, it should be expected that the figure remains close to 0 and even better if it decreases over the periods based on the following formula:  $(\text{fixed costs from current period} - \text{fixed costs from previous period}) / \text{fixed costs from current period}$ . The understanding of the formula is that if fixed costs remain similar, then the result would be a number close to 0; however, if the fixed costs increased from one period to another, then the value would be higher than 0, which is not desirable. Thus, it is convenient for the figure to reach negative values, meaning that fixed costs have decreased over the period.

### **8.3. Conclusions**

In this chapter, it was indicated the outcomes that are expected to occur as a result of the successful implementation of the costing system into Amazona Chocolate' operations. It was pointed out expected results both qualitatively and quantitatively, although the scarce data and lack of information hinder the possibility to indicate what is expected in quantitative

numbers, it was established which were the possible indicators that the firm could use to keep track of its performance. As a brief summary of what has been touched upon in Chapter VIII, as qualitative outcomes it is expected that the firm can improve its decision-making processes, reduce its internal costs through a stricter control, keep its information updated, create a new culture within the firm that is focused on controlling its costs, identify the profitability in each of its lines of products, and what is the primary goal, to improve its competitiveness. As for the quantitative outcomes, it was introduced some key performance indicators, among which the company should focus on the operating margin of its products, the variation in the operating income, the expected budget, and the fixed costs.



## **Chapter IX: Conclusions and Recommendations**

The last chapter of the present consulting report will summarize the research and work performed to propose a solution for the key problem encountered for Amazona Chocolate. It will also highlight the key learnings and takeaways that can be identified from this consulting process. In a later section of the same chapter, concrete recommendations will be provided according to the analysis of the data collected plus the assessment of the internal and external environment from the company.

### **9.1. Conclusions**

Amazona Chocolate is a company that sells high-quality organic chocolate and other cacao derivatives. The company operates in a niche market that value these attributes, however, the success of such companies in the organic chocolate industry has brought many new players into the industry. Due to the ever-increasing and fierce competition, it is important for a company like Amazona Chocolate to remain competitive. Although the firm has invested in strategies to build and maintain its core competitive advantages, it is still limping on different areas due to its size and availability of resources. Although Amazona Chocolate perceives to be profitable based on the money that is left after closing its commitments with its suppliers and collaborators, the firm still does not know for sure where the money is actually being spent. After understanding this, the consulting team, along with the company, agreed to research and work on a costing system that would allow Amazona Chocolate to reduce its internal costs aiming to be more efficient and effective to increase competitiveness in the market.

Then, the report focused on investigating the different costing methodologies available in the literature, while also researching on decision-making tools in the managerial and cost accounting field. The literature introduced the framework of Fisher and Krumwiede (2012) which proposed the implementation of a costing system based on (a) the costs

included in the product, (b) the level of detail to track direct product costs, (c) the organization of indirect costs, and (d) the allocation of indirect costs to the products. This framework was expanded in Chapter IV, where it was also analyzed the financial and accounting departments of Amazona Chocolate as the main problem of the company was identified to be located in this area. The analyses were performed in a qualitative and quantitative manner. Through the qualitative analysis, it was identified that the company had a wide array of products with different presentations and different selling prices. Although the company was clearly aware of the attributes of its products, it was not clear from a first view for the consultancy team why the products were offered at different presentations and prices. This brought into the table a discussion about the differentiation and cost of production of the different lines of products of Amazona Chocolate. Another issue encountered was that the company had information regarding production orders, inventory and sales that were being kept in physical files, which limited the quantitative analysis and also raised the issue of availability of information for quick and improved decision-making. As mentioned before, however scarce was the information, the company could pleasantly offer rough but close estimates of the costs that they were incurring of, as well as numbers regarding its revenues and distribution of sales per line of production. This information was used to build the costing structure of Amazona Chocolate's products and the final costing system later proposed.

The following chapters examined in more depth the causes of the identified problem. It was pointed out that the causes of the inexistent costing structure and costing system were rooted in the lack of time, financial resources, skills and human capital. Further, it was analyzed the value chain of the firm to identify other potential opportunities for improvement after implementing the costing system. This analysis raised different points which Amazona Chocolate should evaluate such as outsourcing opportunities, or appropriating new activities



instead of outsourcing them, change of raw materials suppliers, among others. The next chapter introduced the proposed solutions for the firm. Since the problem statement limited to provide a costing tool for the firm, it was estimated to be optimal to propose a complete costing system, and not restrict the work in providing the cost structure of its different products. Based on this premise, the consulting team performed a weighted score analysis by analyzing the following criteria: cost, benefit, effectiveness, feasibility, and ease of follow up. The cost criterion took into account the costs of implementation and maintaining of the costing system; benefit measured the potential improvements and benefits of the costing system, with no consideration of restrictions of resources or capabilities from the firm; effectiveness measured the degree at which the costing tool would produce the desired result in the company; feasibility evaluated the suitability and sustainability of the implementation and execution of the tool considering the restrictions of the firm; and ease of follow up was a criterion meant to measure the degree of complexity and efforts to transmit the knowledge to somebody else, in case the firm decided to hire new personnel. This assessment required to assign weights to the criteria, which was coordinated and approved by the firm. Through this assessment, it was encountered that the firm should implement a costing system composed by (a) variable and absorption costing (one complementing the other) for assigning costs to products, (b) process costing for tracking direct product costs, (c) department cost pools to organize indirect product costs, and (d) transaction based drivers to allocate indirect costs.

The next chapter introduced the implementation plan to execute the costing system in Amazona Chocolate. It was divided into three main phases composed by leaning, communicating and executing. The first phase was meant to introduce the research and final report of the consulting project, plus the spreadsheets, into the stakeholders of the project, mainly the general manager and the inventory manager. Initiating with a kick-off meeting, the consulting team recommends the stakeholders to read at least once the full report while

also complementing the knowledge with online research that reinforce the main concepts and provide the firm with additional ideas. This initial part was thought as a learning process where the consulting team is willing to provide clarifications and guidance into the use of the spreadsheets and the process of implementation. The second phase is communication, where the general manager introduces the costing system into the organization and indicate them what will be going to be the changes in the organization, while also assigning the new responsibilities. During the communication phase, it is important that the stakeholders already know how the system will work, for which phase 1 has to be successfully finished before presenting it to the rest of the organization. Finally, phase 3 is execution, composed from the collection of information, the analysis of the data, and the control of the information. An additional step is proposed aiming for continuous improvement, where the data has to be kept collected, measured and organized, to be later analyzed, controlled and improved. The total time of implementation was considered to be of 12 weeks. The first 4 weeks would be assigned to phase 1, 1 week for phase 2, and the final 7 weeks for phase 3, from where onwards the continuous improvement should be implemented. As for the cost of implementation, the consulting team estimated that there should not be any cost involved as the assessment of solutions considered not to consume resources from the firm as one of its evaluation criteria. The resources that would have to be invested are basically time from the stakeholders. However, it is recommended to digitalize the physical documentation regarding sales, production, and inventory to electronic files such as spreadsheets. To do so, it could either be done by one of the employees as part of the new responsibilities that will have to be communicated in phase 2, but also the firm could opt to hire someone else to perform the activity. Based on the documentation held in the offices of the firm, the efforts and required skills to perform the activity, it is estimated an investment of around S/800 in a maximum period of 15 days.

Finally, chapter VIII touched upon the expected outcomes for the firm, both in a qualitative and quantitative approach. The improvements that would be expected for Amazona Chocolate after implementing successfully the implementation plan, it was mentioned that the firm will have the potential to improve its decision-making procedures; reduce its internal costs; have up to date information to perform other activities such as forecasts of demand, evaluation of statistics, planning and budgeting, among others; order, plan and control of its costs; creation of a cost-control culture inside the firm; identify the profitability in its product mix; and finally, and as the main goal proposed since the beginning of Chapter II, improve the competitiveness of Amazona Chocolate. Finally, the chapter also introduced key performance indicators that the company should keep track of as a means to evaluate the outcomes of the implementation plan in a quantitative manner. The KPI's proposed are based in the cost efficiency of the company and they are the operating margin, the variation in operating income, the variation of the expected budget, and the variation in fixed costs.

Based on all the research performed both in the actual activities of the firm (the consulting team visited the feria markets, the offices of the company, the production facilities where the firm outsource its production activities, and even the Ecoperlacha farm), and the literature review, it is strongly believed that the proposed solution will positively influence the performance of Amazona Chocolate. The proposed implementation plan will also be successful on the extent of how committed will the company be to follow all the steps suggested, which will also make possible the expected outcomes listed in Chapter VIII.

## **9.2. Recommendations**

It is recommended that Amazona Chocolate implement the proposed plan from Chapter VII to successfully incorporate a costing system into its operations which aims to solve the identified problem regarding how to reduce its internal costs to be more efficient

and effective to increase competitiveness in the market. The implementation plan addresses the activities, the people responsible for the activities, and a timeframe which is flexible according to the schedules of the assigned personnel, but that should not take larger periods of time than the ones recommended. Further the firm should take into account the expected outcomes presented in Chapter VIII, along with the proposed key performance indicators to keep control of the success of the implementation plan.

Along with the implementation plan, Amazona Chocolate should incorporate and work on the information that is needed to fill the spreadsheets worked under the consulting project (Appendix D). These spreadsheets have to be reviewed and filled with the most accurate information regarding costs, sales and inventory. Further, the more data available, the better for a more accurate evaluation of the performance of the firm. For this reason, it is recommended to update the historical data by translating the physical files and documentation to electronic files based on spreadsheets, which will allow to evaluate, compare, and forecast more easily the performance of the firm.

While executing the costing system into its operations to evaluate the internal costs of its products, the decision-making procedure made by the general manager should be followed by the two analysis encountered in the literature review - Chapter III, Table 9. The first of them is a relevant cost analysis which is not linked with the strategic focus of the firm, but rather with a cold analysis of numbers. This analysis can be performed based on the outcomes of the costing system. The second analysis is known as strategic cost analysis and is driven by the firm's strategy with a special focus on the preferences and requirements of the customer. For example, the decision of closing a line of production or outsource an activity currently performed by the firm, among others. They should not only be evaluated from the point of view of whether the company will save resources, but also what would be the impact

on its reputation, service, quality of the product, among any other strategic approach that the company is aiming to engage.

Expanding on the previous point regarding decision-making, the firm should also support the strategic cost analysis with any available data, whether if it is qualitative or quantitative, and not only make decisions based on gut feelings. For example, if the internal costs from the products indicate that one of the lines of production from the firm is not performing as expected, whether it be not reaching the expected profits, or even generating losses or being subsidized by the other products, then the firm should do something about it. Even if it is thought that this is the flagship product of the company, this view has to be supported by data, in this example, it could be done by analyzing the sales behavior of this particular product or by a survey performed in the feria markets regarding the attitudes and preference of the customers.

To keep in line with the objective of being more competitive, further steps in this process that the consulting team recommends are to integrate the costing system with planning and control activities. Among the activities that can be implemented for Amazona Chocolate, it is advisable to incorporate a monthly or annual budget (based on the priorities of the firm) for each of the main operations where the firm is involved, mainly acquisition of raw materials, production process of the chocolate, handling of inventory, and marketing and sale activities. This procedure can be scalable according to the new operations that the firm desires to venture, like for example, expansion of markets. Regarding controlling purposes, it should be followed the key performance indicators from Chapter VIII. An interesting and valuable tool for controlling purposes would also be to integrate standard costing in the budgeting process of the firm, as it estimates the quantity and price of product costs and then is checked against the actual quantity and price of the products. By doing this, it is possible to identify the areas where the company has been spending more than what was budgeted from the begging.

A recommendation that escapes the realm of cost accounting but is still linked to the decision-making process and valuable for the competitiveness of the firm is to work on the following areas: packaging and trained sales personnel. The recommendation is made based on the observations performed by the consulting team while attending the feria markets where Amazona Chocolate performs its B2C sales. First, the packaging is very standard among all products; although it could be perceived as a reduction in costs, the main concern relies on which products are from a superior quality than others. It was seen that there are products that have definitely value-added characteristics, such as Perlacha and Valle del Chanka since the cacao beans are sourced from the Ecoperlacha farm, where great investment was put in research and development to obtain very differentiated crops. This is translated into higher prices if compared with the other products offered by the firm, whose raw materials come from Cooperatives (see Appendix A). In this line of thought, it is advised to differentiate the packaging of these products, so the customers and consumers can understand the reasons that drive this difference in prices.

The second recommendation for the company regarding the differentiation of its products is to train the sales personnel into the concept that the company constantly promotes and advertise. This recommendation also arises from the visits that the consulting team performed to the feria markets. Although Amazona Chocolate regularly attends to several events where it executes in an outstanding way these concepts; it was seen that the sales personnel and the general advertisement displayed in the market' stands do not contribute to the mission and values that frame the operations of the firm. If the sales personnel were instructed in the sustainable concept, operations and value-added activities of Amazona Chocolate, it would be possible to educate the market visitors, especially those who do not know yet the brand of the company. By doing this, it is also possible to make clear the difference in the price of the products.

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## Appendices

### Appendix A: Amazona Chocolate's Line of Products and Selling Price

Table A1

#### *Chocolate Line from "Dark Plain" Origin of Amazona Chocolate*

Presentation		Valle del Chanka 72%	Gran Pajatén 73%	El Shunté 74%	Morona 78%	Perlacha 82%
Bars	60 gr.	S/12.0	S/12.0	S/12.0	S/14.0	S/14.0
Bars	400 gr.	S/37.0	S/37.0	S/37.0	S/39.0	S/44.0
Jars (*)	200 gr.	S/22.0	S/20.0	S/20.0	S/22.0	S/25.0
Bags (*)	500 gr.	S/40.0	S/35.0	S/35.0	S/45.0	S/50.0
Bags (*)	1000 gr.	S/80.0	S/70.0	S/70.0	S/90.0	S/100.0

(\*) Presentation is in coins of 5 gr. each

Note. Retrieved from *Catálogo de productos 2019* by Amazona Chocolate.

Table A2

#### *Blend Chocolate Line of Amazona Chocolate*

Presentation		Blend line 55%	Blend line 70%
Jars (*)	100 gr.	S/8.5	S/8.5
Jars (*)	200 gr.	S/15.0	S/15.0
Bags (*)	500 gr.	S/25.0	S/25.0
Bags (*)	1000 gr.	S/48.0	S/48.0

(\*) Presentation is in coins of 5 gr. each

Note. Retrieved from *Catálogo de productos 2019* by Amazona Chocolate.

Table A3

#### *Allergen Free Chocolate Line in Drops of Amazona Chocolate*

Presentation		Allergen free line 55%	Allergen free line 70%
Jars	150 gr.	S/12.5	S/12.5
Jars	250 gr.	S/19.5	S/19.5
Bags	500 gr.	S/30.0	S/30.0
Bags	1000 gr.	S/58.0	S/58.0

Note. Retrieved from *Catálogo de productos 2019* by Amazona Chocolate.

Table A4

*Cacao Derivatives Line of Amazona Chocolate*

Presentation		Cacao powder	Cacao butter	Cacao nibs
Jars	150 gr.		S/15.0	
Jars	200 gr.	S/11.0		
Bags	500 gr.	S/20.0	S/28.5	S/19.5
Bags	1000 gr.	S/38.0	S/57.0	

Note. Retrieved from *Catálogo de productos 2019* by Amazona Chocolate.



## Appendix B: Fixed Costs of Amazona Chocolate

Table B1

### Fixed Cost Structure of Amazona Chocolate

Identified cost	Monthly price (S/)	(%)	Observation
<b>TOTAL</b>	<b>43,654.22</b>		
Rent (office and warehouse)	2,400.00	5.5%	
Accounting external services	300.00	0.7%	
Risk analyst: credit supervisor (SENTINEL)	450.00	1.0%	
Pension fund	1,200.00	2.7%	
Health insurance (EsSalud)	800.00	1.8%	
Taxes (5th category)	1,400.00	3.2%	
Minor expenses	3,000.00	6.9%	Office supplies, logistics to feria markets and B2B
Car fuel	1,000.00	2.3%	
Maintenance (2 cars)	1,000.00	2.3%	
Certifications	1,095.00	2.5%	US\$4,000 per year for certificates of trade, production and transformation
Cost of molds	328.50	0.8%	US\$1,200 per year
Quality control (laboratory)	250.00	0.6%	S/3,000 per year
Sanitary register (food safety)	166.67	0.4%	S/2,000 per year
Personel training	166.67	0.4%	S/2,000 per year
Advertising, design, marketing	833.33	1.9%	S/10,000 per year
Warehouse investments	250.00	0.6%	
Bar codes	100.00	0.2%	
Innovation project counterparts	1,666.67	3.8%	S/20,000 per year
Technical management advisor	4,000.00	9.2%	
Hosting and domain service	166.67	0.4%	For Amazona Chocolate's webpage - S/ 2,000
Management costs	2,555.96	5.9%	2.5% of sales - food, hotels, traveling
<b>Utilities</b>		<b>2.3%</b>	
Light and water services	400.00	0.9%	
Internet + telephone (2 mobiles and landline)	600.00	1.4%	
<b>Management payments</b>		<b>21.2%</b>	
Miguel - warehouse supervisor	4,250.00	9.7%	S/3,400 per month x 15 months' salary
Vilic - general manager	5,000.00	11.5%	S/4,000 per month x 15 months' salary
<b>Market stand fees</b>		<b>5.0%</b>	
Miraflores	200.00	0.5%	
Surquillo	560.00	1.3%	
Barranco	580.00	1.3%	
La Molina	300.00	0.7%	
Magdalena	550.00	1.3%	
<b>Labor in market</b>		<b>7.9%</b>	
Miraflores	381.33	0.9%	1 seller, 52 weeks and 12 months in a year
Surquillo	762.67	1.7%	2 seller, 52 weeks and 12 months in a year
Barranco	762.67	1.7%	2 seller, 52 weeks and 12 months in a year
La Molina	762.67	1.7%	2 seller, 52 weeks and 12 months in a year
Magdalena	762.67	1.7%	2 seller, 52 weeks and 12 months in a year
<b>Financial expenses</b>		<b>10.7%</b>	
Working capital	2,100.00	4.8%	
Working credit	2,025.00	4.6%	
Bank accounts	320.00	0.7%	
POS selling costs	207.76	0.5%	3.5% of sales - only when people pay by credit card

### Appendix C: Gantt Chart of the Proposed Implementation Plan

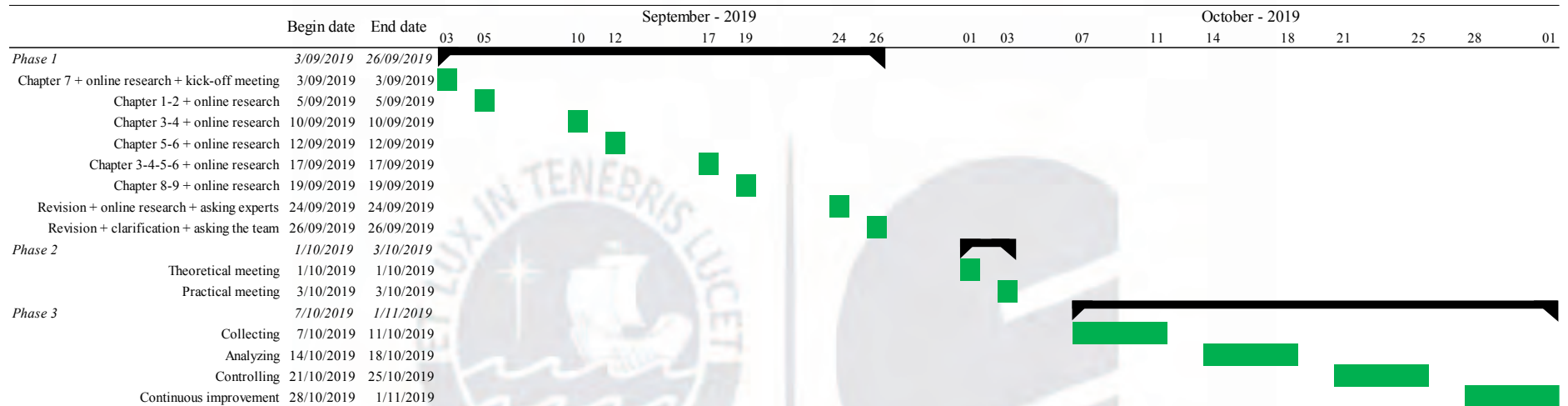


Figure C1. Gantt chart of the implementation plan.

## Appendix D: Spreadsheets for the Development of the Costing System

Table D1

*Cost Structure to Obtain the Price per Product Based on the Information of Inputs and Production Facilities Provided by Amazona Chocolate*

### AMAZONA CHOCOLATE SAC

#### VARIABLE COST STRUCTURE TO PRODUCE 1 KG OF CHOCOLATE (FINAL PRODUCT)

Presentation	Coins 1kg
Recipient	Bags 1000 gr.
Net weight	1000 gr.
Formula	82%
Origin	Ecoperlacha
Factory chocolate process	Selva Alta
Factory butter process	Di Perugia
Sugar supplier	Supplier 1
Efficiency	80% The cacao beans lose 7% in humidity and 13% in peels

#### 1) Ingredients

Cost input	Composition	Unit	Quantity	Price (S/)	Total price (S/)	Observation
Cacao beans -> liquor	77%	kg	1.25	16.00	15.40	Put in Lima
Cacao butter	5%	kg	1.00	43.31	2.17	
Sugar	18%	kg	1.00	8.02	1.44	Inc. Transport

#### 1.A) Cacao butter Cost to produce 1kg of cacao butter:

Cost input	Unit	Quantity	Price (S/)	Total price (S/)	Observation
Cacao beans -> liquor -> butter	kg	2.50	16.00	40.00	Put in Lima
Cost process	kg butter	1.00	3.00	3.00	Different processing cost (pressing)
Cost transportation of beans	kg	1.25	0.25	0.31	From hub to factory

#### 2) Transportation

Cost input	Unit	Quantity	Price (S/)	Total price (S/)	Observation
Transportation	kg	1.00	0.25	0.25	From hub to factory
Transportation	kg	1.00	0.25	0.25	From factory to warehouse

#### 3) Processing

Cost input	Unit	Quantity	Price (S/)	Observation
Coins 1kg	kg	1.00	10.50	

#### 4) Packaging & labels

Presentation	Unit	Quantity	Price (S/)	Observation
Bags 1000 gr.	unit	1.00	1.56	Inc. Bag, labels and box costs

#### 5) Labor cost of packaging

Presentation	Unit	Quantity	Price (S/)	Observation
Bags 1000 gr.	unit	1.00	0.25	

#### Cost summary per kg chocolate:

	(S/)	(%)	
Cacao liquor	15.40	51%	
Cacao butter	2.17	7%	
Sugar	1.44	5%	
Transportation	0.50	2%	
Processing	10.50	35%	
Total cost of processing 1 kg chocolate =	30.01	100%	cost for 100 gr. of chocolate
Net weight of the product =	1000	gr.	
Cost of the product	30.01	94%	cost for 1000 gr. of chocolate
Package and label	1.56	5%	
Labor	0.25	1%	
Total cost of the product =	31.82	100%	Ecoperlacha / 82% / Bags 1000 gr.

Table D2

*Break-Even Analysis for the Products of Amazona Chocolate Based on a Weighted Average**Unit due to the Large Mix of Products of the Company*

Presentation	Product	Selling price	Variable Cost	Contribution Margin	% of Sales	Weighted Average Unit CM	
Valle del Chanka	72%	Bars 60 gr.	S/12.0	S/2.03	S/9.97	3%	S/0.26
		Bars 400 gr.	S/37.0	S/11.41	S/25.59	3%	S/0.67
		Jars 200 gr.	S/22.0	S/7.82	S/14.18	3%	S/0.37
		Bags 500 gr.	S/40.0	S/16.32	S/23.68	3%	S/0.62
		Bags 1000 gr.	S/80.0	S/30.85	S/49.15	3%	S/1.28
Gran Pajatén	73%	Bars 60 gr.	S/12.0	S/1.88	S/10.12	2%	S/0.16
		Bars 400 gr.	S/37.0	S/10.43	S/26.57	2%	S/0.43
		Jars 200 gr.	S/20.0	S/7.33	S/12.67	2%	S/0.20
		Bags 500 gr.	S/35.0	S/15.10	S/19.90	2%	S/0.32
		Bags 1000 gr.	S/70.0	S/28.40	S/41.60	2%	S/0.67
El Shunté	74%	Bars 60 gr.	S/12.0	S/1.82	S/10.18	2%	S/0.16
		Bars 400 gr.	S/37.0	S/10.03	S/26.97	2%	S/0.43
		Jars 200 gr.	S/20.0	S/7.13	S/12.87	2%	S/0.21
		Bags 500 gr.	S/35.0	S/14.60	S/20.40	2%	S/0.33
		Bags 1000 gr.	S/70.0	S/27.40	S/42.60	2%	S/0.68
Morona	78%	Bars 60 gr.	S/14.0	S/1.96	S/12.04	2%	S/0.19
		Bars 400 gr.	S/39.0	S/10.97	S/28.03	2%	S/0.45
		Jars 200 gr.	S/22.0	S/7.60	S/14.40	2%	S/0.23
		Bags 500 gr.	S/45.0	S/15.77	S/29.23	2%	S/0.47
		Bags 1000 gr.	S/90.0	S/27.40	S/62.60	2%	S/1.00
Perlacha	82%	Bars 60 gr.	S/14.0	S/2.09	S/11.91	2%	S/0.24
		Bars 400 gr.	S/44.0	S/11.79	S/32.21	2%	S/0.64
		Jars 200 gr.	S/25.0	S/8.01	S/16.99	2%	S/0.34
		Bags 500 gr.	S/50.0	S/16.80	S/33.20	2%	S/0.66
		Bags 1000 gr.	S/100.0	S/31.82	S/68.18	2%	S/1.36
Blend Line	55%	Jars 100 gr.	S/8.5	S/4.36	S/4.14	5%	S/0.21
		Jars 200 gr.	S/15.0	S/6.71	S/8.29	5%	S/0.41
		Bags 500 gr.	S/25.0	S/13.54	S/11.46	5%	S/0.57
		Bags 1000 gr.	S/48.0	S/25.28	S/22.72	5%	S/1.14
	70%	Jars 100 gr.	S/8.5	S/4.35	S/4.15	8%	S/0.34
	Jars 200 gr.	S/15.0	S/6.69	S/8.31	8%	S/0.69	
	Bags 500 gr.	S/25.0	S/13.51	S/11.49	8%	S/0.95	
	Bags 1000 gr.	S/48.0	S/25.23	S/22.77	8%	S/1.88	

S/18.5

Fixed costs = S/43,654.2

Weighted Average Contribution Marging of the Mix = S/18.5

Break-even point (in units) = 2354

*Note.* The analysis was performed based on the estimation in the percentage of sales by each line of production provided by the company, where the distribution of sales were of 13%, 8%, 8%, 8%, 10%, 20%, and 33% for Valle del Chanka, Gran Pajatén, El Shunté, Morona, Perlacha, and Blend line 55% and 70%, respectively.



Table D3

*Break-Even Point for the Products of Amazona Chocolate (in Soles) Based on a Weighted Average Unit due to the Large Mix of Products of the Company*

Presentation	Product	Selling price	% of Sales	Break-even point (in soles)	
Valle del Chanka	72%	Bars 60 gr.	S/12.0	3%	S/734.46
		Bars 400 gr.	S/37.0	3%	S/2,264.58
		Jars 200 gr.	S/22.0	3%	S/1,346.51
		Bags 500 gr.	S/40.0	3%	S/2,448.20
Gran Pajatén	73%	Bags 1000 gr.	S/80.0	3%	S/4,896.40
		Bars 60 gr.	S/12.0	2%	S/451.98
		Bars 400 gr.	S/37.0	2%	S/1,393.59
		Jars 200 gr.	S/20.0	2%	S/753.29
El Shunté	74%	Bags 500 gr.	S/35.0	2%	S/1,318.26
		Bags 1000 gr.	S/70.0	2%	S/2,636.52
		Bars 60 gr.	S/12.0	2%	S/451.98
		Bars 400 gr.	S/37.0	2%	S/1,393.59
Morona	78%	Jars 200 gr.	S/20.0	2%	S/753.29
		Bags 500 gr.	S/35.0	2%	S/1,318.26
		Bags 1000 gr.	S/70.0	2%	S/2,636.52
		Bars 60 gr.	S/14.0	2%	S/527.30
Perlacha	82%	Bars 400 gr.	S/39.0	2%	S/1,468.92
		Jars 200 gr.	S/22.0	2%	S/828.62
		Bags 500 gr.	S/45.0	2%	S/1,694.91
		Bags 1000 gr.	S/90.0	2%	S/3,389.81
Blend Line	55%	Bars 60 gr.	S/14.0	2%	S/659.13
		Bars 400 gr.	S/44.0	2%	S/2,071.55
		Jars 200 gr.	S/25.0	2%	S/1,177.02
		Bags 500 gr.	S/50.0	2%	S/2,354.04
Blend Line	70%	Bags 1000 gr.	S/100.0	2%	S/4,708.08
		Jars 100 gr.	S/8.5	5%	S/1,000.47
		Jars 200 gr.	S/15.0	5%	S/1,765.53
		Bags 500 gr.	S/25.0	5%	S/2,942.55
Blend Line	70%	Bags 1000 gr.	S/48.0	5%	S/5,649.69
		Jars 100 gr.	S/8.5	8%	S/1,650.77
		Jars 200 gr.	S/15.0	8%	S/2,913.12
		Bags 500 gr.	S/25.0	8%	S/4,855.20
		Bags 1000 gr.	S/48.0	8%	S/9,321.99
Total =				S/73,776.13	

*Note.* The analysis was performed based on the estimation in the percentage of sales by each line of production provided by the company, where the distribution of sales were of 13%, 8%, 8%, 8%, 10%, 20%, and 33% for Valle del Chanka, Gran Pajatén, El Shunté, Morona, Perlacha, and Blend line 55% and 70%, respectively.

Table D4

*Profitability Analysis of the Products from Amazona Chocolate*

	Valle del Chanka 72%		Gran Pajatén 73%		El Shunté 74%		Morona 78%		Perlacha 82%		Blend line 55%		Blend Line 70%		Mini-drops		Derivatives		Total	
Sales	S/14,584.00	100%	S/14,331.00	100%	S/15,546.00	100%	S/13,583.00	100%	S/14,300.00	100%	S/14,432.00	100%	S/16,884.00	100%	S/14,728.00	100%	S/19,151.00	100%	S/137,539.00	100%
Variable Product Costs	-S/5,843.08	-40%	-S/6,579.65	-46%	-S/6,328.71	-41%	-S/7,163.82	-53%	-S/6,522.59	-46%	-S/9,545.55	-66%	-S/10,846.03	-64%	S/0.00	0%	S/0.00	0%	-S/52,829.43	-38%
Gross Margin	S/8,740.92	60%	S/7,751.35	54%	S/9,217.29	59%	S/6,419.18	47%	S/7,777.41	54%	S/4,886.45	34%	S/6,037.97	36%	S/14,728.00	100%	S/19,151.00	100%	S/84,709.57	62%
Variable SG&A	-S/530.42	-4%	-S/627.78	-4%	-S/630.02	-4%	-S/511.40	-4%	-S/505.80	-4%	-S/701.63	-5%	-S/731.85	-4%	-S/775.49	-5%	-S/973.56	-5%	-S/5,987.96	-4%
Contribution Margin	S/8,210.50	56%	S/7,123.57	50%	S/8,587.27	55%	S/5,907.78	43%	S/7,271.61	51%	S/4,184.82	29%	S/5,306.12	31%	S/13,952.51	95%	S/18,177.44	95%	S/78,721.61	57%
Fixed Product Costs	-S/899.35	-6%	-S/1,072.84	-7%	-S/1,074.22	-7%	-S/1,050.63	-8%	-S/1,008.99	-7%	-S/1,124.19	-8%	-S/1,196.36	-7%	-S/1,611.34	-11%	-S/1,507.25	-8%	-S/10,545.17	-8%
Fixed SG&A	-S/1,990.28	-14%	-S/2,355.58	-16%	-S/2,363.98	-15%	-S/1,918.90	-14%	-S/1,897.90	-13%	-S/2,632.71	-18%	-S/2,746.08	-16%	-S/2,909.84	-20%	-S/3,653.05	-19%	-S/22,468.33	-16%
Net Operating Income	S/5,320.87	36%	S/3,695.15	26%	S/5,149.06	33%	S/2,938.25	22%	S/4,364.71	31%	S/427.92	3%	S/1,363.68	8%	S/9,431.33	64%	S/13,017.15	68%	S/45,708.11	33%
# products sold	474		561		563		457		452		627		654		693		870		5,351	
# products in inventory	648		773		774		757		727		810		862		1,161		1,086		7,598	

For the SG&A costs (both fixed and variable) the driver that will be used to allocate these indirect costs to the products would be the number of product sold, as they are easy to keep record, thus it will not consume resources from Amazona Chocolate  
For the fixed product costs the driver that will be used to allocate these indirect costs to the products would be the number of product in inventory, as they are easy to keep record, thus it will not consume resources from Amazona Chocolate

*Note.* The numbers displayed in the shown table are just referential since there was not information available to display the results. The consulting team played with numbers just to check the functionality of the formulas from the spreadsheet. It is necessary that Amazona Chocolate updates the information to obtain real results.

Table D5

*Income Statement based on variable and absorption costing for Amazona Chocolate*

<b>Variable costing</b>				<b>Absorption costing</b>			
Sales	S/137,539	100%		Sales	S/137,539	100%	
Variable Product Costs	<u>-S/52,829</u>	<u>-38%</u>		Cost of Goods Sold	<u>-S/63,375</u>	<u>-46%</u>	
Gross Margin	S/84,710	62%		Gross Margin	S/74,164	54%	
Variable SG&A	-S/5,988	-4%		Selling General & Administrative Expenses (SG&A)	-S/28,456	-21%	
Contribution Margin	<u>S/78,722</u>	<u>57%</u>		Variable SG&A	-5,987.96		
Fixed Expenses	-S/33,014	-24%		Fixed SG&A	<u>-22,468.33</u>		
Fixed Product Costs	-10,545.17			Net Operating Income	S/45,708	33%	
Fixed SG&A	<u>-22,468.33</u>			Financial Expenses	<u>-S/4,653</u>	<u>-3%</u>	
Net Operating Income	S/45,708	33%		Income before taxes	S/41,055	30%	
Financial Expenses	<u>-S/4,653</u>	<u>-3%</u>		Taxes (30%)	<u>-S/12,317</u>	<u>-9%</u>	
Income before taxes	S/41,055	30%		Net Income	S/28,739	21%	
Taxes (30%)	<u>-S/12,317</u>	<u>-9%</u>					
Net Income	S/28,739	21%					

*Note.* The numbers displayed in the shown table are just referential since there was not information available to display the results. The consulting team played with numbers just to check the functionality of the formulas from the spreadsheet. It is necessary that Amazona Chocolate updates the information to obtain real results.