ARC Enterprise: Getting a Business Start-up Out of the Pit

It was a bright and sunny Monday morning. Arvin R. Costanilla, a recent graduate at the University of the Philippines Los Baños (UPLB) with a Bachelor's of Science in Agribusiness Management (BSABM), was sipping a hot cup of coffee while gazing at the financial reports provided by his accountant. He sighed in disappointment over the poor financial performance of his fruit juice processing business, ARC Enterprise.

During college, Costanilla was selected to participate in a project that helped students harness opportunities from food processing techniques and methods developed by UPLB. His mentors encouraged him to pursue the production of functional fruit and vegetable juices. Functional fruit juices, unlike traditional fruit juices, utilized fruits that were known to have high level of important nutrients. The idea to enter the fruit juice industry made sense to Costanilla since Filipino consumers had become more health conscious recently.[1]

Costanilla's trial production runs were financed by the Department of Science and Technology (DOST). A financial grant was awarded by DOST to UPLB to support promising student business start-ups. Each selected student was provided with up to Php 15,000 for the six-month implementation period of their business start-up. Raw material support was also provided by DOST. The processing of fruits and vegetables were done at the UPLB Institute of Food Science and Technology (IFST).[2]

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 This case was prepared by Assistant Professor Normito R. Zapata Jr. of the Department of Agribusiness Management and Entrepreneurship College of Economics and Management at the University of the Philippines Los Baños (DAME-CEM, UPLB).This case was prepared as the basis for class discussion rather than to illustrate either effective or ineffective handling of a situation and features a fictitious company based on real events. This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of Cooperative Agreement #AID-492-A-13-00011. The contents do not necessarily reflect the views of USAID or the United States Government.

A business mentor and a technical consultant guided Costanilla in all aspects of enterprise development for his then student start-up. As a diligent student and a prudent entrepreneur, Costanilla studied the fruit juice industry in initial market research, analyzed his findings, ultimately deciding to pursue a dalandan fruit juice processing business for his start-up. For six months, Costanilla enjoyed subsidies and financial grants for his trial-run business.

After graduation in April, Costanilla began a self-owned dalandan juice operation following the promising conclusions he came to with his student business venture. Costanilla was excited to finally reap the sweet fruits of this entrepreneurial undertaking—or so he thought. It was now five months since Costanilla started operating ARC Enterprise and his net cash flows remained negative. The next batch of juice production was about to start, but Costanilla had yet to receive enough cash to finance ARC Enterprise's working capital requirement. Not long ago, mentors from UPLB told Costanilla that a dalandan processing venture was a promising business. Now it seemed that these prospects and promises were false. Costanilla contemplated how to solve his negative cash flow problem to save ARC Enterprise from an untimely demise.

Arc Enterprise

With the technical and business skills acquired from college, Costanilla felt equipped to become an entrepreneur. He registered ARC Enterprise in the town of Los Baños in the province of Laguna, Philippines as a sole-proprietorship business. He looked for an initial investment in ARC Enterprise from a third party, with his parents generously offering to provide the capital as a graduation gift.

Based on Costanilla's business plan, he needed Php 300,000 (USD $7,000) to start operations. To minimize his start-up costs, Costanilla decided against building his own production plant because his production volume was relatively low. He, instead, made an arrangement for toll processing at a local university's plant. In this arrangement, Costanilla used the processing equipment at the university during scheduled periods for a fee of Php 1.50 per bottle. ARC Enterprise's warehouse and office was located in a small apartment unit in the town of Los Baños, at a rental rate of Php 9,000 per month. Thus, Costanilla only had to worry about his working capital requirement for ARC Enterprise.

The Philippine Fruit Juice Industry

In recent years, demand for fruit juice increased at a rate of 4-5% per year[3] because of the perception that juice was healthy and nutritious. In 2009, the food and beverage processing industry dominated the Philippines' food export market, which accounted for 48% (USD $988.31 million) of total food exports.[4]

Fruit juices have been known to provide a number of health benefits to consumers. Juices contained moderate amounts of pyridoxine, inositol, and folic acid. These substances were known to help improve metabolism, help cure and manage diseases such as diabetes, cancer, and high blood pressure, and promote normal growth during infancy. Fruit juices, which have been associated with appreciable intakes of ascorbic acid,[5] also contained flavonoids, a water soluble molecule that had anti-oxidant properties.[6] Also, juices contained various vitamins and minerals that helped prevent certain diseases. Fruit juices, especially from citrus, have been considered a good addition to a diet because of the provided vitamins and minerals like potassium, Vitamin C, and folate.[7]

One hundred percent real fruit juice was considered a healthy addition to daily intake when consumed as part of a well-balanced diet.[8] Research showed that the consumption of 100% real fruit juice was closely related to improved nutrient intake and overall diet quality.[9] Individuals that consumed fruit juice also had significantly higher intakes of Vitamin C, potassium, magnesium, and notably lower intakes of added sugars as compared to non-fruit juice consumers.[10] In addition to this, 100% juice had no added sugar. Instead, it contained the natural sugars found in whole fruit. Per calorie, fruit juice packed more nutritional value than other beverage choices.[11]

Commercially available juices were classified as dehydrated or powdered, ready to drink, and canned or concentrated.[12] New products including soursop (guyabano) juice, lime (calamansi), and a coconut water mix emerged in the market around 2010. A number of manufacturers of fruit juice were sole proprietors classified as microenterprises[13] with an asset size of less than Php 3 million (USD $70,000).[14] Under the Philippine Barangay Micro Business Enterprise Act of 2002, microenterprises enjoyed tax benefits and preferential access to government services and facilities.[15] The industry also included large companies engaged in fruit juice production such as San Miguel Corporation, RFM Corporation, Universal Robina Corporation, Dole, and Del Monte.

Studies showed that the drink Tang, produced by Mondelez International, was the most popular brand of powdered juice in the Philippines.[16] On the other hand, the drink Zest-O, from Zest-O Corporation, was the leading ready to drink juice beverage.[17] Pineapple was one of the most popular tropical fruit juice flavors in the Philippines.[18] Packaging materials used in fruit juices came in many forms such as doy,[i] carton, plastic or PET bottles, glass bottles, and easy to open cans. Processing and packaging technologies were continuously being studied by Philippine government agencies such as the Industrial Technology and Development Institute (ITDI) of the Department of Science and Technology (DOST).

i Doypack is a sealed plastic bag that is designed to stand up on its own.

The abundance of low cost tropical fruits during peak season, from May to September, was one of the major advantages of the Philippine fruit juice industry. In 2009, the total amount spent in the Filipino market on processed fruits and vegetables was Php 5,409 million (USD $126 million) which equated to 1.3% of the total household expenditure.[19] The top industry players include Cenmaco, Inc., Del Monte Philippines, Inc., Dole Philippines, Inc., Kraft Foods (Philippines), Inc., Marsman-Drysdale Foods Corp., Pepsi Cola Products Philippines, Inc., Philippine Beverage Partners, Inc., RFM Milk and Juice Division, San Miguel Corp., The First Enterprises, Inc., Universal Robina Corp., and Zest-O Corp. The local fruit juice market was also being catered to by imported products. In 2011, the value of fruit juice imports to the Philippines was USD $1,682,812.[20] The market for fruit juice in the province of Laguna in the Philippines was dominated by brands produced by big manufacturers. "Zest-O [was] number-one, followed by Del Monte 100% Pineapple Juice, Del Monte Fit 'n Right, Big 250 (also by Zest-O), Del Monte Juice Drinks, Tropicana Twister by soft drink giant Pepsi, Funchum by competitor Coca Cola, Magnolia Juice, and Minute Maid by local beverage giant … San Miguel Corp."[21]

Recently, the snack manufacturer Liwayway Marketing Corporation launched a new product called Smart C. Just like Costanilla's product, Smart C capitalized on the Vitamin C content found in fruit juice drinks. However, Constanilla's product remained unique because Smart C used lemons, oranges, and pomelos in its fruit flavor profile. Using competitive pricing strategies was a common practice among industry players, with the prices of fruit juice in the Filipino market ranging from Php 20 to Php 30 per 320ml bottle.

Dalandan: The Philippine Orange

Citrus, an evergreen tree, belonged to the Family Rutaceae. [22,ii,23] Citrus was native to Southeast Asia, particularly in North-Eastern India, where various wild and endangered species still grew in an undisturbed habitat.[24] It was one of the major fruit crops of the Philippines. Other major fruit crops included mangos, pineapples, and bananas. Dalandan played a very important role in the Filipino diet due to its nutritional value. The dalandan was a type of citrus (see **Appendix 1**).[25] As a native Philippine orange, the dalandan had a good source of Vitamin C. The dalandan tasted of a blend of a mandarin orange and a calamansi, a Philippine lime, leaning more toward a sweeter taste profile. Mandarin orange, a sweet fruit, had a bright orange skin that was easy to peel, while the dalandan had a bright green skin with flesh that was sour or occasionally sweet (See **Appendix 2**).

Originating from China, dalandan fruits adapted to Filipino climate conditions by developing a flavor that was both sour and sweet.[26] In China, all farmlands were owned by the government and, for this reason, its agricultural sector was said to be inefficient.[27] On the other hand, labor productivity in the Philippine agriculture sector remained ahead of large countries like China and India.[28]

[ii] The Rutaceae, a valuable source of edible fruit, is an ornate family of flowering plants that are often sweet-scented

Like other citrus fruits, the dalandan grew in tropical and subtropical climates.[29] It thrived in non-humid and irrigated conditions like that of the Mountain Province, a landlocked province of the northern Philippines in the Cordillera Administrative Region.[30] Some companies in the Philippines produced beverages made of dalandan. Examples included the Coca-Cola Company, which produced a carbonated drink called Royal Tru-dalandan,[31] and the Zest-O Company, which produced the Zest-O Dalandan Fruit Soda.[32]

The Philippine Sweetener Industry

Sweeteners played a major role in the Filipino diet. Native Filipino cuisine was known to be compiled of a sweeter palate, with items such as rice cakes (e.g., kalamay, kutchinta, sinukman), beverages (e.g., sago at gulaman), and desserts (e.g., leche flan, ube). Most native entrée s, such as asado (pork in sweet sauce) and tocino (pork marinated in sweet syrup), were also characterized by a high degree of sweetness.

2011 was considered the "sweet year for the local sugar industry due to the rising demand for sugar in Asia, driven by increasing consumption in the fast-growing market of China, as well as in Indonesia, Japan, and Malaysia."[33] However, the Philippine industry soon faced a big challenge from a tariff rate reduction on imported sugar. In 2012, the first reduction[iii,34] on the sugar tariff occurred as a result of the Association of Southeast Asian Nations Free Trade Agreement (AFTA).[iv] The Philippine government tried to mitigate the tariff rate problem by bettering domestic infrastructure such as automated loading ports, farm-to-mill roads, and irrigation facilities. The success of this mitigation strategy remains to be seen. The Philippine Sugar Regulatory Administration was also involved in a number of projects that aimed to support local sugarcane farmers during the sugar importing slump.

Technological developments, changes in market preferences, and the fluctuation in sugar prices (see **Exhibit 1**) led to the emergence of a number of natural and artificial sweeteners. Muscovado sugar, an amorphous brown powder sugar, was gaining market share as a healthy sweetener that was conventionally cooked from sugarcane juice through open pan evaporation.[35] Stevia also emerged as a natural sweetener. It came from the stevia plant, known as the stevia rebaudiana, which thrived in tropical and subtropical regions. The Philippine Department of Agriculture also introduced sweet sorghum as an anti-diabetic sweetener.[36] The prospect for a higher production of sweet sorghum looked positive since it adapted well to the semi-arid tropics, including the tougher dry land areas.[37]

[iii] Prior to 2012, the tariff for sugar was 38%. It went down to 28%, 18%, and 10% in 2012, 2013, and 2014 respectively. It will be down to 5% by 2015.
[iv] AFTA is a trade bloc agreement by the Association of Southeast Asian Nations (ASEAN) that aims to support the local industries among ASEAN countries.

Though a number of healthy alternatives to traditional sugar were widely available, the high prices of these options hindered industry applications. Artificial sweeteners, which were synthetic sugar substitutes, were developed to address this issue. Artificial sweeteners contributed little or no calories to what it were added to, an important trait for health-conscious individuals. It was also several times sweeter than sugar. The food and beverage industry in the Philippines increasingly used artificial sweeteners due to its cost effectiveness. However, there were some consumers that were apprehensive about the negative health impacts caused from using these artificial sweeteners.

Exhibit 1

Average Sugar Retail Prices in Metro Manila for the Crop Year 2010-2011

Months	Raw (Php)	Washed(Php)	Refined(Php)
September 2010	51.18	53.69	55.17
October	51.91	53.79	54.70
November	54.32	56.12	57.52
December	57.43	58.82	62.84
January 2011	58.69	61.10	65.01
February	59.07	61.19	65.54
March	57.37	60.70	63.26
April	55.01	57.83	61.68
May	53.24	56.19	60.04
June	49.92	53.24	57.15
July	44.97	47.77	51.17
August	41.66	45.17	48.33
Average	52.90	55.42	58.53

Source: Republic of the Philippines Department of Agriculture. Average & Prevailing Sugar Prices in Metro Manila. n.d. Web. 21 September 2014. <http://www.sra.gov.ph/metro-manila-prices/>.

Marketing Dalandan Fruit Juice

Costanilla knew that his products name was very important. During college, he had conducted a survey of possible brand names to use for ARC Enterprise's dalandan fruit juice. After much thought, he registered and used the brand name Fresh Dew. The name perfectly captured the cool and refreshing experience of drinking dalandan fruit juice. He initially packaged the product in 320ml Polyethylene (PET) bottles (see **Appendix 3**).

Costanilla thought that his products would appeal toward students and working professionals who were health conscious. Hence, his target market became UPLB students and professionals. Instead of directly selling his products to final consumers, Costanilla made a consignment arrangement with existing stores around UPLB. He carefully selected stores that gave his product a better customer image and exposure. Given the stiff competition in the fruit juice market, Costanilla set the suggested retail price at Php 20 per bottle, which was considered relatively cheap by Filipino consumers. His wholesale price to distribution outlets was Php 17 per bottle.

To create awareness about his new product, Costanilla utilized social networking sites. In the first five months of his operations, sales performance seemed good. Costanilla was collecting sales after one month of operations, with an average of 2% of his products being returned by distribution outlets.

Supply Sourcing

Dalandan Juice Materials

The direct materials needed to produce dalandan fruit juice were sugar, citric acid, purified water, dalandan puree, PET bottles, and sticker labels.[38] All of these materials were available from local Filipino suppliers. However, since ARC Enterprise was a new venture and its volume of operations was relatively low, suppliers were reluctant to extend trade credit to Costanilla. The primary raw material for Costanilla's product was dalandan puree. Given the seasonality of the dalandan fruit, a supply of fresh fruits was not available year round. Hence, the dalandan was processed into a puree to extend its shelf life. Costanilla sourced his dalandan puree from Big Fruits Corporation[v] at a price of Php 90/kg for a minimum quantity order of 1,300kg. Big Fruits Corporation also offered discounts for large quantity orders of the puree. In bulk, the puree cost Php88/kg and Php 87/kg for quantities of 1,500kg and 1,600kg, respectively. The citric acid used by Costanilla came in powdered form. The packaging size of the citric acid available on the market was 10kg, which cost Php 1,500 per pack.

Sugar was an essential component in Fresh Dew. He bought sugar from supermarkets in Los Baños such as South Supermarket and Robinsons Supermarket. The prices of sugar in these supermarkets did not differ much from each other. However, Costanilla observed that the price of sugar was increasing rapidly. When he started ARC Enterprise, the price of refined sugar was Php 52/kg. Five months later, it increased to Php 68/kg (see **Appendix 4)**. For this reason, Costanilla decided to stock up on sugar inventory before prices increased further.

[v] Big Fruits Corporation is a fictional company created to exemplify a scenario for educational purposes.

In ARC Enterprise's first month of operation, Costanilla purchased 900kg of refined sugar. The following month, he reduced his purchase of sugar to 800kg due to excess inventory. However, after noticing that sugar prices were increasing, Costanilla decided to make monthly purchases of 1,200kg, regardless of excess inventory at the months end. Alternatives to refined sugar, such as artificial sweeteners that were less costly, could have been used for the dalandan fruit juice. Alternatively, coconut sugar, muscovado, or stevia could have been used to further reinforce the health benefits of the product. These sugars had lower glycemic index,[vi] which was better for diabetics. But Costanilla had yet to experiment with the use of any sugar substitutes. He was afraid that product quality would deteriorate with the use of artificial sweeteners. Nevertheless, he was starting to consider shifting to artificial sweeteners to help mitigate ARC Enterprise's negative cash flow problem.

Packaging Materials

PET bottles were the preferred packaging materials of micro enterprises engaged in fruit juice production. This material could easily be used with the manual filling process that was practiced by ARC Enterprise. The PET bottle was also widely available since the purified drinking water industry used the same packaging material. Other packaging materials, such as doy and carton, required the use of expensive packaging machines. To be cost effective in using doy and carton, economies of scale was essential. To be cost conscious, Costanilla decided to use PET bottles while ARC Enterprise grew.

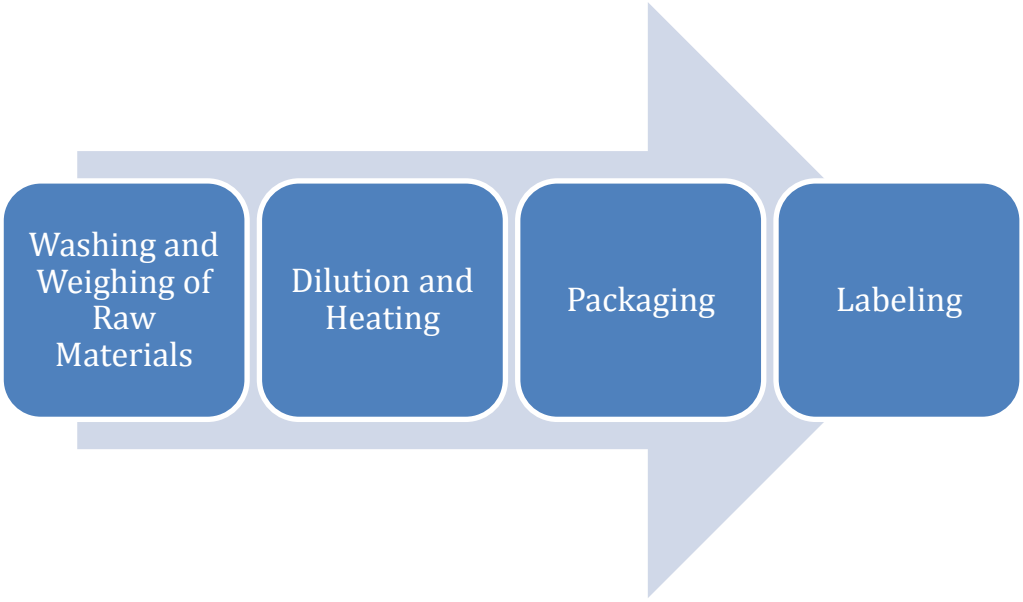
The 320ml PET bottles were sourced by Costanilla from the town of Biñan, which was roughly 35km away from where his fruit juice was produced. To minimize the transportation cost per PET bottle, Costanilla ordered a fixed volume of 25,000 PET bottles at a price of Php 3 per bottle. The minimum order required by ARC Enterprise's supplier was 5,000 PET bottles. Each PET bottle was labelled manually by Costanilla using paper stickers, which a local print shop charged Php 1.60 for each label printed.

Managing the Operations of ARC Enterprise

As a BSABM graduate, Costanilla was knowledgeable about managing an enterprise and was well trained in the technical aspects of production. Despite his managerial and technical skills, Costanilla wanted to make ARC Enterprise's operations simple. He employed two full-time employees: a marketing assistant and a production assistant. The marketing assistant was in charge of deliveries and the execution of promotional campaigns. Marketing the products cost Php 5,000 per month. The production assistant managed inventories and product processing. Both of his full-time employees received a fixed monthly salary of Php 8,000. A part-time accountant also provided services to ARC Enterprise at a monthly cost of Php 4,000.

[vi] Glycemix index is a number that indicates the effect food has on a person's blood sugar level.

Exhibit 2
Dalandan Fruit Juice Production Process



Source: Fontanil, Alvin L. A Technopreneurship Study of Fresh Dew Dalandan Ready-to-Drink Juice in Los Baños, Laguna. 2011. BS Research Report University of the Philippines Los Baños. Print.

Just like other fruit juice products, the production process of dalandan fruit juice was relatively simple (see **Exhibit 2**). The process started with washing bottles and weighing the dalandan fruit puree and sugar. Afterwards, the dilution and heating process was done. Then, the finished products were transferred to PET bottles manually. When the filled bottles cooled, labels were added. One batch of production took almost five hours to complete from start to finish, meaning Costanilla could only process one batch per day. The output of a single batch under current operation conditions was 1,000 bottles.

Financing ARC Enterprises

After his first month of operations, Costanilla incurred a cash deficit. His parents generously provided him with the financing to cover the initial deficit to keep ARC Enterprise operating. Costanilla thought that the cash deficit was one of the birth pains of a business start-up and was not discouraged by this problem initially. Since it took the distribution outlet one month to pay Costanilla, he was able to collect from his first month of sales in the second month. The first fruits of his labor brought renewed enthusiasm and energy to Costanilla despite the financing hardships. The second month provided better cash flows for Costanilla. There was still a cash deficit, but it was minimal compared to the previous month. He sourced any required additional financing from a close friend to keep ARC Enterprise afloat.

The next months proved to be challenging for ARC Enterprise. The company's cash deficits increased tremendously. See **Appendix 4** for a summary of ARC Enterprise's operations for the first five months. With the production process for month six of operations about to start, Costanilla knew that the demand for Fresh Dew would be at its peak. However, the first five months of operation had drained all of his capital resources. He was tempted to source additional funds from the informal moneylender that charged an effective interest rate of up to 120% per annum, but he also considered the possibility of shifting to less costly artificial sweeteners.

Thoughts raced through Costanilla's mind on how to save ARC Enterprise. Though being an entrepreneur was a career path that he wanted to pursue, Costanilla had not yet reaped the rewards he thought ARC Enterprise promised. As Costanilla poured over his financial statements once more, he wondered how to solve his cash flow problems not just in the short term, but for the long term, as well.

Appendices

Appendix 1

Dalandan, the Philippine Orange

Source: "Dalandan." Flickr. Flickr, A Yahoo Company, 27 Jun. 2008. Web. 21 Sept. 2014. <https://www.flickr.com/photos/lolo_cdom/2723398976/>.

Appendix 2

Difference Between a Mandarin Orange and a Dalandan

Mandarin Orange[i] **Dalandan**[ii]

Source: Appendix 2 was created using the following sources:
i "Mandarin Orange." Wikimedia Commons. Wikimedia Foundation, Inc., 13 April. 2014. Web. 21 Sept. 2014. < http://commons.wikimedia.org/wiki/File:Mandarin_Oranges_%28Citrus_Reticulata%29.jpg >.
ii "Dalandan." Market Manila. Market Manila, 1 Sept. 2004. Web. 21 Sept. 2014. <http://www.marketmanila.com/archives/dalandan>.

Appendix 3

Fresh Dew: Arc Enterprise's Dalandan Product

Source: Fontanil, Alvin L. A Technopreneurship Study of Fresh Dew Dalandan Ready-to-Drink Juice in Los Baños, Laguna. 2011. BS Research Report University of the Philippines Los Baños. Print.

Appendix 4

ARC's Financial Data for July to November 2011

Production Volume and Raw Materials Utilization, July-November 2011							
Month	**Production Volume**[i]	**Dalandan Puree**		**Sugar**		**Citric Acid**	
		Quantity (kg)	Php/kg	Quantity (kg)	Php/kg	Quantity (kg)	Php/kg
July	21,800	1,122	90	808	52	9	150
August	20,000	1,029	90	741	55	8	150
September	21,650	1,050	88	756	58	8.50	150
October	19,200	988.50	87	711	60	12	150
November	22,000	1,250	87	756	68	8.50	150

[i] Based on a 320ml. fruit juice production rate.

Cash Disbursements in Php, July-November 2011					
Cash Disbursement	**July**	**August**	**September**	**October**	**November**
Purchases					
Dalandan Puree	117,000	117,000	132,000	139,200	139,200
Sugar	46,800	44,000	69,600	72,000	81,600
Citric Acid	1,500	1,500	1,500	1,500	1,500
PET Bottles	68,670	63,000	68,198	60,480	69,300
Labels	36,624	33,600	36,372	32,256	36,960
Processing Overhead	32,700	30,000	32,475	28,800	33,000
Marketing Expense	5,000	5,000	5,000	5,000	5,000
Rental	9,000	9,000	9,000	9,000	9,000
Administrative Expense	20,000	20,000	20,000	20,000	20,000
Total Cash Disbursements	337,294	323,100	374,145	368,236	395,560

Cash Flows in Php, July-November 2011					
	July	**August**	**September**	**October**	**November**
Cash Receipts	0	363,188	333,200	360,689	319,872
Less: Cash Disbursement	337,294	323,100	374,145	368,236	395,560
Net Cash	(337,294)	40,088	(40,945)	(7,547)	(75,688)
Add: Beginning Cash	300,000	(37,294)	2,794	(38,151)	(45,698)
Ending Cash Balance	(37,294)	2,794	(38,151)	(45,698)	(121,386)
Less: Minimum Cash	10,000	10,000	10,000	10,000	10,000
Excess Cash (Required Financing)	(47,294)	(7,206)	(48,151)	(55,698)	(131,386)

Exchange Rate: Php42.89 : USD 1[ii]

[ii] The exchange rate conversion came from the source: "United States Dollar (USD) and Philippine Peso (PHP) Year 2011 Exchange Rate History –Yahoo Finance," Online Currency Converter. MobileSoftJungle Ltd., n.d. Web. October 1, 2014. <http://www.freecurrencyrates.com/exchange-rate-history/USD-PHP/2011>.

Source: Appendix 4 was developed by the author for the purposes of class discussion and does not represent real data.

Endnotes

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