
The Winning Formula: Breast Milk Substitutes in the Developing World

God is good, Sunardi thought to himself. After graduating with a master's degree in food science from a prestigious Dutch university, he had gone back home to his native land, Junesia,ⁱ and started employment with Weigroen, a Dutch multinational that sold nutritional products, primarily infant formula. Marketing was a good position to be in. While it did not involve a lot of technical work, it was a good opportunity to learn the entire business. Finance people had to be consulted for the cost data; he interacted with sales people for field information, coordinated with production, and there were frequent trips abroad to consult and train with the global group.

Life was good indeed. It was just that there was a minor irritation that day. It was World Breastfeeding Day and, like clockwork, the demonstrators had shown up again. This was not your usual set of protesters. Most of them were women; some were pregnant, and a few brought their children. There were even some nuns and naturally, plenty of reporters. They were protesting what they believed to

ⁱ Junesia is a fictional country in the developing world.

be the unethical marketing practices of the infant formula companies. From the viewpoint of the more radical protestors, infant formula should not exist at all.

It was peaceful but the baleful stares he got when he went through the company gates made him feel like a criminal. "Don't these people realize that infant formula is a public service? Many mothers cannot breastfeed and Weigroen makes the best possible alternative on the market," Sunardi thought to himself. "Sure, we do make some compromises for business reasons but still, infant formula is better than other alternatives that mothers might use like rice water or pure cows' milk." Still, his inner voice nagged him because he knew that Weigroen actually had two types of formula. One was a solid product, but the other one was just acceptable.

With a sigh, Sunardi settled into his desk and thought about the task at hand. The marketing director, Theo had requested that he generate a new marketing strategy for one of their best-selling products, Zondemel. This happened frequently. The market moved so fast that it was getting difficult to come up with a creative marketing strategy for the product. In the first place, government regulations prevented him from making contact with customers. Advertising was prohibited. He could not even make his packaging attractive. Sunardi thought that perhaps he should go back and reflect on why he and Weigroen were in this situation in the first place. By reviewing the regulations, perhaps he could find some way around them.

Infant formula

Among foods, infant formula is rather unique in that it is the sole source of nutrition for the infant. The only other similar products would be those sold for the elderly or diseased who are unable to feed themselves. Efforts to feed infants whose mothers are either unable or unwilling to nurse their children had a long and checkered history. "Wet nurses," lactating women who were able to stand in for the biological mother, were an ideal solution from a health standpoint, but it was inconvenient and awkward at best. Cows' milk was the obvious choice; the historical record does not reflect the results, but they must have been disastrous. Cows' milk is so drastically different from human breast milk that newborn infants are unable to digest it.¹ One must wonder how many such *ad hoc* experiments in infant nutrition happened before society eventually learned. It took generations before an acceptable breast milk substitute was found. Even then, acceptable merely meant that the product did not kill the consumer. With major advances in nutrition and food chemistry, the product gradually improved such that it more closely mimicked breast milk.² The modern infant formula, while still based largely on ingredients from cows' milk, was a wonder of technology even involving raw materials from cultured (but non-GMO) microalgae.³ Nevertheless, it was still an imperfect substitute as the manufacturers' own R&D departments kept finding out. It would be fair to say that infant formula would probably never really copy mothers' milk exactly. Even the best infant formula was associated with increased risks of allergies (atopy), diabetes, and obesity.⁴

The development of infant formula was accompanied by a rise in the number of infant formula businesses. While the contracting of "wet nurses" was a completely informal affair within a small community, infant formula was a product that could be manufactured, distributed, and sold for a profit. Marketing campaigns were thus started to influence the purchase decisions of those who could impact sales the most. These were parents and health care providers. In addition to conventional advertising and attractive packaging, marketing campaigns included free samples given to parents and physicians. Company nurses also visited parents to ostensibly train them in parenting techniques, but did not miss the opportunity to sway them toward their employers' brands. Medical representatives also offered physician trips to conferences abroad, meals at luxurious restaurants, and other entertainment.

The results were, in hindsight, predictable. Promoting infant formula as a safer alternative to cows' milk also undermined breastfeeding. Breastfeeding rates dropped considerably.⁵ Nowhere were the results more drastic and disastrous than in the developing world in Asia and Africa. In the developing world there were other consequences besides the drop in breastfeeding and the loss of the benefits from breastmilk. Clean water was not available in many developing countries and so when powdered infant formula was mixed with dirty water this resulted in diarrhea with catastrophic results in infants. In addition, to save money, powdered infant formula was often mixed at a lower dilution than recommended, resulting in malnutrition.⁶

The realization of the impact of infant formula marketing on infant mortality slowly grew within the medical community, leading to increasing calls for regulation. In 1974, the outcry culminated in the publication "Baby Killer" by Mike Muller and London-based organization War on Want. This was recognized as the watershed moment in the campaign against infant formula marketing practices. In 1977, breastfeeding advocates led by the Infant Formula Action Committee organized a boycott of Nestle products that lasted into the 1980s. Stronger government regulations on a national and global scale soon followed.⁷

Infant formula regulations

Product Regulations

While many developed countries have had the means to generate their own infant formula regulations, most developing nations do not have the necessary expertise in infant nutrition or resources to be able to formulate their own regulations. Thus, they rely on regulations promulgated by the World Health Organization (WHO) and the Food and Agriculture Organization (FAO) of the United Nations. The regulations specify the composition, quality, and safety requirements for infant formula.⁸

Marketing Regulations

From the viewpoint of the infant formula manufacturers (and Sunardi), the thorniest regulations were those on how infant formula could be marketed. In 1981, WHO promulgated the International Code of Marketing of Breast-milk Substitutes, usually shortened to "the WHO code," which provided guidance on how infant formula could be marketed.⁹ The WHO code is non-binding but many countries including Indonesia, Brazil, Pakistan, and most of the EU (but, interestingly, not the United States)¹⁰ had translated it into laws with substantial penalties, including jail terms.

Marketing activities were severely curtailed by the WHO code. The following (among others) were prohibited:

- Advertising or promotion to the general public of breastmilk substitutes (including infant formula and complementary foods), bottles, or teats;
- Promotion of breastmilk substitutes by health facilities and health professionals;
- Free or discounted samples of breastmilk substitutes or items that promoted breastmilk substitutes to pregnant women, new mothers, or health facilities;
- Direct contact of marketing professionals with expectant mothers or mothers of young children;
- Payment of bonuses directly related to volume of sales of breastmilk substitutes;
- Pictures or other graphics showing infants or an idealized result of the use of breastmilk substitutes.¹¹

In addition, companies were mandated to highlight health risks for infants who were artificially fed, or who were not exclusively breastfed on their product labels.¹²

The Infant Formula Business in Junesia

In the developed world, each infant formula company sold a formulation that represented the best infant formula possible. While there were some product variants for special conditions like lactose and milk protein intolerance, the only really significant product variants were ready-to-use liquid and powder (which required reconstitution with water). Infant formula feeding had come to be widely accepted such that many manufacturers were able to get government contracts to supply infant formula to low-income families.

Things were different in developing nations like Junesia. Because of consumer price sensitivity, companies frequently had to offer low-priced, less-than-ideal formulations. The formulations that would normally be sold in the developed nations were sold as expensive “premium” brands for the more affluent sectors of the market while formulations that met minimum standards were sold as “economy” versions. The market was also segmented by age-group. There was a “starter” category (infants 0-6 months old), a “follow-on” category (6 months–2 years old), a “growing up” or “toddler” category (1-3 years old), and a school-age category (3-12 years old). These divisions reflected the natural progression in the child’s diet and nutritional needs, with the primary difference being at around 6 months old when the infant started the transition from 100% liquids to a mixture of liquid and solid food.

These age-group differences were also reflected in the infant formula regulations (discussed in the previous section) which specified the product composition and allowable marketing activities at each child development stage.

Zondemel, the product Sunardi was assigned to work on, was part of the economy starter category. The economy starter segment was dominated by Weigroen’s biggest competitor, Reges, through its two brands: Regeslac and Netes. (Product Compositions are shown in **Appendix A**. Brand shares in the infant food category are shown in the “Brand Shares Infant Food” sheet in the Excel file that accompanies this case.) Zondemel had made some inroads when a fourth competitor, Caconlac, finally dropped out of the race but Sunardi was under severe pressure to deliver even faster growth.

Sunardi tried quickly going through the 5P’s of marketing in his head:

Product: The products were strictly regulated, but the companies involved had innovated somewhat by adding nutrients that were not required. Maybe he could use this as leverage? Perhaps some nutrients in Zondemel were at better levels than the competition?

Place: Weigroen did have a very good trade marketing team, but somehow Sunardi thought that most mothers would not be making their purchase decision based on what attracted their attention on the shelf. Still, every little bit could count.

Price: The Junesian “C” consumers, Zondemel’s target market, were indeed very price sensitive, so maybe there was something there. Management, however, was already unhappy with their margins. (Prices are in the market prices sheet in the Excel file).

Promotion: Regulations did not allow Sunardi much room to work with. Advertising even “innocent” name recognition ads, were absolutely prohibited. Still, perhaps some kind of subtle name recognition campaign without direct mention of infant formula might work.

People: There was an existing sales force of medical representatives, similar to those in the pharmaceutical industry. The medical representatives were a fairly spirited bunch with a win-at-all-cost mentality. The problem was keeping them in check so they did not all wind up in jail. If the spirit of the law was followed, the discussions between the medical representatives and doctors, nurses, and midwives would be purely technical and scientific. Still, they had come up with creative means of getting on the good side of the healthcare providers. The Ministry of Health, however, was becoming suspicious of all the lavish dinners and conferences in exotic places and was thinking of setting limits.

“Difficult indeed,” thought Sunardi. But there was something else nagging him. Should Weigroen even be in this business at all? The products in the economy sector were less than ideal although they did meet regulations. Should they be marketing products that they knew were not the best possible alternatives for the babies? Sure, the babies would not die, but Sunardi and his colleagues knew that the economy formulas were not the best alternatives to breast milk and the reason that the formulas met regulations was because the regulations took a long time to update. Perhaps they should follow the lead of Baade, the other infant formula company in Junesia, which did not compete in the economy sector at all. Knowing what he knew, Sunardi would not feed Zondemel to his own kids. He would give them Naio, their more expensive brand. But then, wasn’t the company line true? Would customers really revert to feeding their children rice washings or sugar water if the economy formulas were not available?

Sunardi realized that these decisions were not for him to make. Nonetheless, maybe his thoughts could be shared with Theo. They were good friends after all. Maybe over coffee. In the meantime, Sunardi had to come up with a strategic plan for accelerating the growth of Zondemel. Was there something he could do? What could it be? (See **Appendix B** for links to breastfeeding advocates).

Appendix A

Product Label Claims for the Three Competitors in the Junesian Economy Infant Formula Sector

Zondemel from Weigroen

Per 100 g Protein 9.6 g, fat 23 g, linoleic acid 3,800 mg, -linolenic acid 270 mg, carbohydrate 60 g, vit A 1,590 IU, vit D 270 IU, vit E 9.6 IU, vit K₁ 43 mcg, thiamine 370 mcg, riboflavin 770 mcg, vit B₆ 300 mcg, vit B₁₂ 1.68 mcg, niacin 4,700 mcg, folic acid 72 mcg, pantothenic acid 2,400 mcg, biotin 14.4 mcg, vit C 87 mg, Ca 480 mg, P 260 mg, Mg 38 mg, Fe 5.8 mg, Zn 4 mg, manganese 111 mcg, copper 260 mcg, iodine 82 mcg, Na 130 mg, K 520 mg, Cl 300 mg, selenium 13.9 mcg, choline 115 mg, inositol 24 mg, taurine 26 mg, carnitine 7.2 mg, dietary fiber (inulin) 1.49 g. Energy: 480 kcal

Regeslac from Reges

Per 100 g Fat 23.9 g, linoleic acid 3.65 g, linolenic acid 467 g, DHA 44 mg, protein 12.5 g, carbohydrate 58.2 g, minerals 2.4 g, Na 155 mg, K 495 mg, Cl 305 mg, Ca 475 mg, phosphorus 305 mg, Mg 33 mcg, manganese 45 mcg, moisture 3 g, vit A 1,500 iu, vit D 230 iu, vit E 6 iu, vit K 40 mcg, vit C 50 mg, vit B₁ 0.35 mg, vit B₂ 0.75 mg, niacin 5 mg, vit B₆ 0.37 mg, folic acid 45 mcg, pantothenic acid 2.2 mg, vit B₁₂ 1.5 mcg, biotin 11 mcg, choline 50 mg, inositol 25 mg, taurine 40 mg, carnitine 8 mg, Fe 6 mg, iodine 75 mcg, copper 0.3 mg, Zn 37 mg, selenium 5 mcg. Energy: 498 kcal.

Netes from Reges

Per 100 g Protein 12 g (60% whey 7.1 g, 40% casein 4.7 g), carbohydrate 57 g, fat 28 g (linoleic acid 5,512 mg, linolenic acid 449 mg). Vit: Vit A 1,969 IU, carotenes 165 mcg, vit D 335 IU, vit E 8.7 IU, vit K 53 mcg, vit B₁ 787 mcg, vit B₂ 1,181 mcg, vit B₆ 472 mcg, vit B₁₂ 1.6 mcg, niacin 3,937 mcg, folic acid 63 mcg, pantothenic acid 2,362 mcg, biotin 16 mcg, vit C 71 mg, choline 79 mg, inositol 26 mg. Minerals: Ca 362 mg, P 262 mg, Mg 50 mg, Fe 6.3 mg, Zn 4.7 mg, manganese 39 mcg, iodine 79 mcg, Na 126 mg, K 551 mg, Cl 341 mg, selenium 11 mcg. Nucleotides 20 mg (CMP 10 mg, UMP 3.9 mg, AMP 3.1 mg, GMP 1.6 mg, IMP 1.6 mg), taurine 37 mg, L-carnitine 7.9 mg, lutein 20 mcg. Energy: 529 kcal

Source: Created by the author of the case.

Appendix B

Breastfeeding Advocates

<https://hbr.org/product/nestle-alimentana-s-a-infant-formula-abridged/590070-PDF-ENG>

<http://www.babymilkaction.org/archives/1660>

<http://www.citizen.org/infant-formula-marketing-background>

While the United States has not put the WHO Code into law, the Center for Disease Control (CDC) monitors infant formula marketing:

<http://www.cdc.gov/breastfeeding/pdf/strategy9-addressing-marketing-infant-formula.pdf>

Source: Compiled by the author of the case.

Endnotes

- 1 U.S National Library of Medicine. "Cow's Milk – Infants." MedlinePlus Medical Encyclopedia. 1 July 2015. Accessed 17 July 2015. <<http://www.nlm.nih.gov/medlineplus/ency/article/002448.htm>>.
- 2 Stevens, Emily et al. "A History of Infant Feeding." *The Journal of Perinatal Education*. 18.2 (2009): 32-39. Accessed 17 July 2015. <<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2684040/>>.
- 3 EFSA Panel on Dietetic Products, Nutrition and Allergies. "Scientific Opinion on the Essential Composition of Infant and Follow-on Formulae." *EFSA Journal*. 12.7 (2014): 3760. Accessed 17 July 2015 <<http://www.efsa.europa.eu/en/efsajournal/doc/3760.pdf>>.
- 4 Stevens.
- 5 Kaplan, Deborah L. and Kristina M. Graff. "Marketing Breastfeeding — Reversing Corporate Influence on Infant Feeding Practices." *Journal of Urban Health: Bulletin of the New York Academy of Medicine*. 85.4 (2008):486-504. Accessed 23 July 2015. <<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2443254/>>.
- 6 Guasti, Cally. "From Breastfeeding to Bottles." *The Journal of Global Health*. 2.2 (2012): 1-4. Accessed 23 July 2015. <http://www.ghjournal.org/wp-content/uploads/2013/01/Fall_2012_FINAL_2.pdf>.
- 7 Guasti.
- 8 United Nations. "Standard for Infant Formula and Formulas for Special Medical Purposes Intended for Infants." By Codex Committee on Nutrition and Foods for Special Dietary Uses. FAO/WHO, 2011. Accessed 17 July 2015. <http://www.codexalimentarius.org/download/standards/288/CXS_072e.pdf>.
- 9 World Health Organization/United Nations. *International Code of Marketing of Breast-Milk Substitutes*. WHO, 1981. Accessed 18 July 2015. <<http://www.who.int/nutrition/publications/infantfeeding/9241541601/en/>>.
- 10 United Nations. "National Implementation of the International Code of Marketing of Breastmilk Substitutes." April 2011. New York: UNICEF. 2011. Accessed 18 July 2015. <http://www.unicef.org/nutrition/files/State_of_the_Code_by_Country_April2011.pdf>.
- 11 International Code of Marketing of Breast-Milk Substitutes.
- 12 International Code of Marketing of Breast-Milk Substitutes.