Commercialization Plan for Waterproofing Made of Expanded Polyethylene (Unicel) to the Market Goal

Rocío Lozano Vázquez • Crisanto Hernández Tenopala • Elizabeth Montiel Huerta • José Luis Moreno Rivera

Department of Administrative Engineering, National Technological Institute of Mexico, Technological Institute of Apizaco, Tlaxcala, Mexico
rousselozva272@gmail.com

Abstract: The objective of the research is to design a marketing plan1 to launch the waterproofing made of expanded polyethylene "Unicel" in the State of Tlaxcala, which is aimed at the segments: the general public of the municipality of Xaloztoc and the focused construction companies to the construction in the entity. The study is of a quantitative, sequential and probatory type, it is sequential and probative; each stage precedes the next, bypassing the steps, with a mixed approach consisting of the systematic integration of quantitative and qualitative methods in a single study in order to obtain a more complete "picture" of the phenomenon (Hernández Sampieri, Fernández Collado & Baptista Lucio, 2010), the population universe is defined with reference to the databases of the intercensal survey (INEGI, 2015), using the formula of finite populations of less than 500,000, which helps to determine the population samples for the two segments; for construction companies, stratification is done to be more precise. For the market study, the competition and the application of surveys to determine the acceptability of the waterproofing in the segments are identified. The results of the surveys are favorable which allows positioning the waterproofing and have coverage of other segments, 81% of construction companies are willing to acquire the product and 90% of the general public considers it attractive for consumption. It is also observed by the acquisition of sustainable products. With the results obtained, a marketing plan is designed which entails lines of action for each of the proposed strategies.

1. Introduction:

The investigation arises from the concern of the deterioration of the environment, so the discarded Unicel is the answer to a problem that needs to be examined and channeled.

The Unicel is a "cellular and rigid plastic material manufactured from the molding of pre-expanded polyethylene expandable pearls or one of its limpers, which has a closed cellular structure and filled with air" (National Association of Expanded Polystyrene, nd); To find a solution and then identify the properties of the context and determine the actions to follow, its objective is the design of a marketing plan for the commercialization of the expanded polyethylene waterproofing based on the observation of the competition, the research seeks to identify what causes intervene in a given framework, in order to create a universal idea of the element of study, and thus access the decisions are based on selected information and examined. Conclusion of the outstanding aspects of the element of study identified, allow positioning opportunities and order them according to the importance of proposing a possible solution.

The National Association of the Chemical Industry (ANIQ), estimates that the national consumption of Unicel in Mexico is 125 thousand tons per year, of which 25% it is for the manufacture of disposable products for the food industry; the remaining 75% divided into the construction and packaging sector (Monreal Ávila, 2016).

Table 1: *World Consumption of Unicel*

REGION	CONSUMPTION (k / ton)						
	2001	2003	2005	2007	2009	2011	2014
Asia	1,477	1,903	1,943	2,330	2,493	3,079	3,305
Europe	1,118	1,100	1,266	1,624	1,614	1,801	1,704
North America	518	551	640	610	488	513	543
Rest of the world	1689	211	250	347	382	440	645
Consumo Total	3,251	3,765	4,099	4,911	4,977	5,833	6,197

(IHS Market, 2017).

In order to do the investigation, it is necessary to use instruments, such as surveys of construction companies and the general public, interviews with experts, observation of the competition; which will allow the information collected to determine the acceptability of the waterproofing made of expanded polyethylene (Unicel), to market through a small company with efficient strategies.

Expanded polyethylene currently has multiple applications, such as the preparation of covers, thermal insulation, equipment packaging, transportation, storage of food, among others, this causes that generate large volumes of solid waste of this polymer, which presents a high chemical stability, becoming a pollutant of the environment (González Lorenzo, 2012).

In the results obtained from the analysis of data obtained in the experimentation, they refer to the acceptance of the waterproofing by the determined segments, highlighting the variables that have influenced the marketing plan; as well as the SWOT diagnosis to the company HG Group materials and steels where strengths, opportunities, and potentials are maximized to minimize the weaknesses and threats. In the market study, the strongest competition in the waterproofing market is determined. For the marketing plan, the methodology is followed according to (Kloter, 2012), which is based on the determination of objectives, preparation of strategies, action plan, establishment of the budget.

2. Methodology:

In the investigation, the observation of the competition was used, which is identified in Table 2; the samples of the universes are determined for the segments under study with the aforementioned formula. Table 3; and in Table 4, a stratification is carried out to carry out the surveys of the suitable construction companies; in Table 6 shows the universe of the segment to the general public of the selected municipality and the formula for finite populations is applied to obtain the number of exact surveys.

Table 2: *Competitors of waterproofing*

Waterproofing Distributors	Location
FESTER	Apizaco, Tlaxcala
FESTER	Sta. Ana Chiautempan, Tlaxcala
FESTER	Tlaxcala, Tlaxcala
SOJI S.A DE C.V	Apizaco, Tlaxcala
SIKA	Tlaxcala, Tlaxcala.
COMEX	Apizaco, Tlaxcala

Table 3: *Universe of Construction Companies*

Xaloztoc	Zacatelco	Chiautempan	Apizaco	Huamantla	Tlaxco	Tlaxcala
2	5	13	44	16	4	66

Taken from INEGI, (2016).

Stratify this "n" in order that the sample elements or the analysis units have a certain attribute; where "N" is the universe of the population and "n" is the determined sample.

Divide the population of the construction companies into subpopulations or strata and select a sample for each stratum. Where (fh) is the sample of the universe.

Table 4: *Construction Stratification.*

Stratum by municipality	Construction companies dedicated to the construction of low-income housing	Total population (fh) = 0.72 # Constructors (fh) = Sample	Sample
1	Zacatelco	5	3
2	Chiautempan	13	9
3	Tlaxcala	66	48
4	Apizaco	44	32
5	Tlaxco	4	3
6	Huamantla	16	12
7	Xaloztoc	2	1
		N= 150	n=108

The total universe for the general public of the municipality of Xaloztoc, Tlaxcala is 4,677 inhabitants, according to the Intercensal Survey (INEGI, 2015). The sample is determined by the proportion of households surveyed, by calculating the required sample size, with a confidence interval of 95% and an estimation error of 5%. The investigation will be carried out in the population of San Cosme Xaloztoc, Tlaxcala., With a universe of 4,677 homes.

Datos:
n=?
e= 5%
σ= 1.96
p= 50%
q= 50%
N= 4,677

$$n= \frac{3.84\,(4{,}677)\,(0.50)\,(0.50)}{(0.05)^2\,(4{,}677\text{-}1)\,+3.84\,(0.50)\,(0.50)}$$

$$n= \frac{4{,}489.92}{12.65} = \mathbf{355}\ \ \mathbf{Polls}$$

3. Results:

The results are processed through the SPSS program, where Hernández Sampieri and colleagues (2010), mentions that when the coefficient of the Alpha of cronbach is equal to 0.25 it is considered low reliability, the 0.50 is the regular and from 0.75 or more it is considered acceptable, in the case that it is greater than 0.90 it is considered very acceptable.

Tabla 5: *Resultado constructoras de fiabilidad.*

Reliability Statistics	
Cronbach's Alpha	N of Items
.894	11

(Pruebas de IBM SPSS México, s.f.)

Therefore, it is determined by the descriptive statistics, determining the outstanding values of the process.

Based on the results of the SPSS, the average represents the average value of the data from the sample of

Table 8: *Descriptive Statistics.*

ITEM	355	355	355	355	355	355	355	355	355	
MEAN	1.95	2.14	1.32	2.7	1.17	2.46	2.30	1.05	1.72	4.53
DESV. STDAR	.208	1.401	.652	.448	.38	.638	.848	.214	.449	.796
VARIANCE	.043	1.963	.426	.20	.143	.407	.720	.046	.202	.634
RANK	1	3	2	1	1	3	2	1	1	2
MINIMUM	1	1	1	2	1	1	1	1	1	3
MAXIMUM	2	4	3	3	2	4	3	2	2	5

(Pruebas de IBM SPSS México, s.f.)

The sample determined based on the formula of finite populations were determined 355 surveys, and the result of the average represents the average value that exists between the values of the sample; the standard deviation refers to the measurement of the degree of dispersion of the data with respect to the average value therefore for the value .208 the data in this section are more grouped with a minimum value of 1 and a maximum of 2 unlike the data1

Table 6: *Descriptive Statistics.*

ITEM	111	111	111	111	111	111	111	111	111	111	111
MEAN	1.14	2.63	1.68	3.07	1.14	3.07	2.61	2.21	2.18	1.27	1.70
STD DESVIATION	.343	.774	.716	.260	.343	.260	.926	.541	.575	.446	.996
VARIANCE	.118	.599	.512	.067	.118	.067	.858	.293	.331	.199	.993
RANK	1	2	2	1	1	1	2	2	2	1	3
MINIMUM	1	1	1	3	1	3	2	1	1	1	1
MAXIMUM	2	3	3	4	2	4	4	3	3	2	4

(Pruebas de IBM SPSS México, s.f.; Asociación Nacional de Poliestireno Expandido, 2019)

construction companies, the standard deviation represents the measure of the degree of dispersion of the data with respect to the average value; when the deviation is .260 the data are more grouped within the minimum 3 and maximum 4; unlike the .996 data where wide data dispersion is recognized and its minimum range is 1 and maximum is 4.

Table 7: Reliability of General Public Results.

Reliability Statistics	
Cronbach's Alpha	N of Items
.876	10

(Pruebas de IBM SPSS México, s.f.)

Based on the theory of the SPSS .700 is an acceptable value for the reliability of the research instrument and the result obtained from the surveys applied for the general public was obtained the value 0.876 where a very acceptable value is determined.

.401 where clearly shows an eminent dispersion of the data set with a minimum value of 1 and a maximum of 4 obtained from the SPSS.

The determination of the demand for waterproofing made of expanded polyethylene for construction companies is determined based on the results of the surveys carried out. See table 9.

The estimation of the demand of the general public is also determined based on the results obtained from the surveys applied to customers and individuals in general in the municipality of Xaloztoc, Tlaxcala. The prices of the competition re conducted by polling, observation and conducting an investigation of them. The research instruments are made up of 11 "items" where 9 variables are qualitative and 2 variables are quantitative, in which the Liker scale was used for the possible answers; questions 1 and 2 are oriented to the distribution channels and the waterproofing acquisition, question 3 focuses on the product price, questions 4 to 9 are guided to the market study, question 10 emphasizes the knowledge of the waterproofing and question 11 is emphasized to the media

most used to receive the promotions and advertising of the waterproofing.

Table 9: *Determining the Demand of Construction Companies.*

Category	No. of employees	Construction companies in the State	% Builders that would buy	Works per average year	Construction houses x year	Liters x house used	Total annual consumption in lts.
Micro	10	14	15%	3	5	57	855
Little	11 a 30	67	58%	5	10	57	2,850
Median	31 a 100	25	22%	12	20	57	13,680
Big	101 a 251	5	4%	2	150	57	17,100
Total							34,485

3.1. Marketing Plan

Objective

Position the waterproofing made of expanded polyethylene "Unicel", in the segments established by the sample; to maintain the market which in turn increases the notoriety level of "utilcel", in the State of Tlaxcala, to be market leaders.

Specific objectives

o Achieve leadership in market marketing for construction companies in the State of Tlaxcala.
o Carry out an advertising campaign in order to increase the client portfolio.
o Investigate competitive products in order to identify actions and conditions of products and promotions.
o Design advertising focused on market positioning, with vision of new market segments.

Table 10: *Annual Marketing Plan Budget.*

Expenses	
Training course	$5,000
Information flyers printing (2 thousands)	$1,120
Impression of exit surveys (1 thousand)	$560
Advertising in MOMENTS magazine	$500
Announcement in the yellow section	$8,500
Advertising in spectacular	$2000
Advertising spots in F.M. Apizaco Center	$6,500
Advertising spots on Radio Universidad	$8,250

Table 10: Annual Marketing Plan Budget.

Expenses	
Perifoneo (3 days) before each fortnight (8) months	$12,000
Personalized invitations (111)	$1,282
Printed pencils	$988
Hostesses (3)	$6,000
Tables and chairs	$7,000
Refreshments	$2,000
Sound, Screen, Projector	$1,400
Coffee	$300
Tea	$250
San Martín bottled water (355 ml)	$3,240
Sandwiches (canapés, empanadas)	$3,600
Cookies	$800
Utensils	$1,040
Napkins	$200
Sugar (5 kg)	$150
Advertising canvas print	$300
Total	$69,380

Initial investment of HG Group.

Based on the demand information derived from the market study, the HG Group company must invest $ 135,248 to cover the 3% need of the target market. For the financial capacity of the company.

Current situation of the company according to the correlation matrix SWOT

Internal Factors / External factors	List of Strengths: Company of Tlaxcala; Experienced professional team; Distribution network established in the State.; Marketing of quality products.	List of Weaknesses: Poor customer service.; Portfolio of limited products; Unsuitable advertising; Ignorance of the waterproofing in the market
List of Opportunities: Construction of Infonavit homes in Tlaxcala; Employment relationship with construction companies; Promote in the rainy season; Expectation for market inclusion regional	FO (Maxi-Maxi): Keep the customer through after-sales service; Promotions and discounts; Make demonstrations	DO (Min-Maxi): Develop advertising campaign; Train employees in relation to customer service.
List of Threats: Entry of new competitors; Aggressive competition; Competency positioning; Changes of competitors	FA (Maxi-Mini): Observation of the competition; Analyze the waterproofing industry through the Internet and media survey.	DA (Mini-Mini): Checking results of the waterproofing with demonstrations to the clients.; Incorporate clients from other sectors

Taken reference the Espinosa, (2013)

Table 11: *Investment - Projection of the demand to 3 years*.

Demand	Potential demand lts	% to cover initial	Liters	No. buckets	(x) price to distributor
Construction companies	34,485	10	3,420	180	$308,160
General public	15,740	5	627	33 cuvettes	$56,496
Investment					$364,656

It is projected that the company HG Group will have an increase of 10% in its economic capacity for the acquisition of product to 3 years.

Table 12: *Projection.*

Target market 10%	1st Year 180 c. * 19	2nd Year 198 * 19.	3rd Year 218 * 19
Construction companies	3420 lt	3,762 lt	4,142 lt
Target market 5%	1 año 33*19	2 año 35*19	3 año 37*19
General public	627 cub.	665 cub..	703 cub.

Table 13: *Investment projection to 3 years, increasing by 25%.*

Construction companies	1 año	2 año	3 año
Initial annual investment	$308,160	$385,200	$481,500
General public			
Initial investment	$56,496	$70,620	$88,275
Marketing plan	$69,380	$72,580	$75,780
Total	$434,036	$528,400	$645,555

3.2. Technology:

The company HG Group materials and steels relies on technology to publicize, promote and attract customers, sell, after-sales service and attracting new prospects of customers from different segments in which the product meets their needs. waterproofing, this will help the positioning and growth of the market in the State; all this in order to satisfy their customers and establish a continuous improvement with the comments and comments made to us via the internet.Página web.

3.2.1. Social networks like Facebook and WhatsApp

Currently, social networks play a very important role for the growth of any business, the willingness, scope and commitment to customer satisfaction is the most important thing which social networks bring us to potential customers and different segments by what this means of vital importance.

4. Discussions:

Based on the results obtained, it is determined that with the execution of the annual marketing plan and with the concern shown by the respondents of the segments established for acquiring the expanded polyethylene waterproofing (Unicel), a stable positioning will be maintained in the market with medium-term projection of the increase thereof and expansion to other sectors such as government, health sector and educational institutions in order to have a presence and coverage in the waterproofing

segment. It is important to emphasize that it has an extra benefit unlike the other waterproofing since it helps the conservation of the environment a very important point in these times.

Corresponding Author:

Rocío Lozano Vázquez, Eng.
Department of Administrative Engineering, National Technological Institute of Mexico, Technological Institute of Apizaco, Tlaxcala, Mexico.
E-mail: rousselozva272@gmail.com

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