

Measuring the Impact of Shared Value. A Business Case

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Shared Value is a concept that since its inception in 2011 has attracted the interest of academics, governments, businessmen and decision-makers in all areas. It is through this first exploratory study that is illustrated as a sample of three Central American companies create this value and how important this creation is for companies and society when is measured.

Traditionally, the creation of value in the three dimensions of sustainability has not been quantified at the enterprise level, although it is mentioned in the reports of those that use the GRI but without trying to estimate a measure of this intrinsic value in the concept of sustainability. The liberal use of concepts of Sustainable Development, Sustainability and Corporate Social Responsibility, sometimes confusing, does not propose its measurement with the exception of the Corporate Sustainability model that only records the total financial bottom line without intending to separate it into its three dimensions.

The study is exploratory and descriptive with a focus on measuring the phenomenon under study using a meta-matrix created based on the theory of Shared Value. The results of the research are represented in the matrix, which allows to open the pattern of continuing to measure more cases, has been raised in the Harvard Business School in Global Impact Council in December 2019 from this three cases from three different Central American countries: El Salvador, Honduras and Nicaragua.

Finally, this research offers a discussion and proposal to study about Measuring Shared Value and the Ratio Social Value - Private Value

Keywords: social value, economic value, environmental value, shared value, ratio social value-private value, competitiveness

INTRODUCTION

Currently, one of the main problems regarding the creation of social and economic value in Latin America is that many companies still believe in investing at activities that are disconnected from the company's strategy (Porter, 2002), wasting great opportunities to reap the rewards of value (Porter et al. 2009).

Prahalad & Hart (2002) have clarified that there is a fortune at the base of the economic pyramid, but it has been difficult for companies to find that value. Hart's work (2010) clearly shows the need to change the traditional mode of Capitalism, which is at a crossroads. This scenario probably reflects the great coincidence in literature with shared value concept by Porter and Kramer (2011), about the new way of doing business.

According to Porter (2009), the competitive advantage must be sustainable, as long as companies continue to invest in value at areas that do not completely improve productivity, market conditions or products. This sustainability becomes practically impossible, hence the link between competitive advantage and social responsibility exists (Porter & Kramer, 2006).

Conceptualization

Vidal (2011) stated that company creates shared value when its action generates a significant benefit for society that is also valuable for the business and can create shared value through three different ways that complement each other, developing a virtuous circle: conceive new products and markets, redefine productivity in the value chain and build local clusters where it operates. Shared value implies innovation.

For this research, "Shared Value" is defined as: "Company policies and practices that enhance the competitiveness of the company, at the same time that employees and community, where it is sold and operates, progress" (Porter & Kramer, 2011).

Vidal (2011) recommends that business managers make decisions guided by the shared value principle, which means the creation of economic value in a way that, at the same time, satisfies society needs and aspirations. They systematically insist that the company must reconnect its business success with social progress. Shared value is not philanthropy, it is the new lasting way to achieve economic success. It is not part of periphery; it is located in the center of doing business.

From the above, a first step for companies, universities and institutions for collaboration is to think about co-creating value simultaneously with the other actors in environment, not working in isolation, otherwise, the opportunities to create value in society are lost.

Based on Umana (2019), value can be lost if money is not invested in productive bets that can unleash a wave of innovation and growth in companies. This is called a kind of smart money in entrepreneurship investments and in the first analysis, Umana (2013) states that the world needs companies to invest their money intelligently to contribute to sustainability, in the work on the Sustainability Equation.

Next, a whole typology of the advancement of corporate social responsibility to the creation of value is developed.

It is proposed that the progress of literature has gone through five stages: Philanthropy, Voluntary CSR, CSR Response, Strategic CSR and Shared Value and it is in this last stage that there are gaps and confluence of interests that other phases cannot cover, such as the disconnection of the strategy to which Philanthropy is accused, as the defect of acting voluntarily, or the reactive way to the social problems of the CSR response.

Concepts and Evolution of CSR

Discussions about the CSR importance have taken more than 80 years (Ballantine 1932; Berle 1931). This analysis suggests substantial differences in the way corporations act: Corporate Philanthropy, Voluntary CSR, CSR Response, Strategic CSR and Shared Value.

Corporate Philanthropy

At this stage, philanthropy becomes a voluntary component of a company and consists of a voluntary contribution of private resources for public purposes (Lester Salamon, 1992). Philanthropy is by definition voluntary; therefore, it has received many criticisms for the efforts disconnected from strategy (Porter & Kramer, 2002). There have been enemies of CSR (Friedman, 1970), and defenders (Samuelson, 1971). Wang, Choi and Li (2008) concluded that the relationship between corporate philanthropy and financial performance is best captured by an inverted U-shape. From this analysis, it was concluded that philanthropy is a stage of corporate social responsibility but is disconnected from business strategy.

Voluntary CSR

Corporate philanthropy evolves in the literature towards voluntary CSR, which reflects a continuous commitment of companies to behave ethically and contribute to the economic development of employees and families, as well as the community and society in general (Hediger, 2010; Holme and Watts, 2000). Jamali and Mirshak (2007) have highlighted the strategy of these issues in developing economies and the lack of empirical studies on CSR, which unfortunately has only been a voluntary process. Based on this analysis, we propose that voluntary CSR is a second stage of CSR disconnected from the business strategy and the company's actions fall short of creating value by acting voluntarily, but not necessarily strategically.

Responsive CSR

Voluntary CSR evolves in the Responsive CSR, reflecting a reaction of the company as a corporate action on the consequences on its shareholders (Freeman, 1984). Porter and Kramer (2006) defines this stage as “good corporate citizenship and mitigate damages of the company's activities in the value chain”. Based on the above, this stage is still reactive and therefore remains disconnected from the strategy.

Strategic CSR

The strategic CSR portrays an integrated business strategy in all the company's value chain activities, observing each business decision to simultaneously contribute to maximizing long-term value for shareholders and benefits for society and the environment. Many authors have reflected on the competitive advantage of CSR (Drucker, 1984; Elkington, 1994; McWilliams and Siegel, 2001).

One of the first works based on the competitive need of the company and its social, environmental and business value was Hart (1995), who stated that corporate social performance can be a source of competitive advantage and one of the pioneering empirical studies is Russo and Fouts (1997). McElhaney (2009) provided an excellent definition of strategic CSR, which is "A business strategy that integrates with the company's strategic objectives and core competencies and, from the beginning, is designed to create commercial value and positive social change, and it is integrated into the business culture and daily operations".

Finally, McWilliams, Siegel and Wright (2006) described Hart's theory (1995-2011) as the one that allows the company from CSR to contribute strategically to a sustainable competitive advantage. We propose that, at this stage, the company can contribute at a high level to the creation of value, and this is probably not the stage of value maximization.

Shared Value

The most sophisticated way to create social value from business activity is through the business value that is intelligently invested to generate more profits and capacities for society in the long-term. This research proposed a shared value model that enhances competitiveness (Porter & Kramer, 2011), for instance, by investing in “abilities, training and skills” for employees, but this investment will translate into great savings in productivity, improvements in inventory management and quality, this is the purpose of this new capitalism model.

The following hypothesis is proposed as discussed above:

H1: The creation of shared value can lead companies to maximize the value invested in social and environmental value and convert it into greater economic value, and this is a virtuous circle of value creation.

It is important to highlight that in some countries like: El Salvador, Honduras and Nicaragua, for instance, training projects on “skills and competencies”, employee health, investment in schools, partnership programs with civil society institutions and the state, can easily reflect improvements in business continuity, from the safety of the worker and improvements in productivity due to the employee and family are guaranteed with social working conditions that are very difficult to achieve in countries with social issues like organized crime and juvenile delinquency, these are the most problematic historical factors for doing business.

The research tries to answer the questions: **Is there any methodology to Measure Shared Value? Is there a relationship between the creation of Shared Value and the return of these investments?** This first question may indicate the next steps, which should be promoted by academia and companies, on which more research can be accelerated. The second question may indicate the increased investment in shared value model, to simultaneously create social, environmental and economic value.

METHODOLOGY

The research was exploratory and descriptive, through a case study from, Zainal (2007), thus the results are indicative of how cases behave in large companies with more than 100 employees, and that it is a first model that reflects strategic data of at least three years of consecutive results.

These case studies exemplify the behavior of the meta-matrix generated to capture company information and occurs in El Salvador, Honduras and Nicaragua, places that represent an excellent laboratory, due to the company provides economic activity to all that area, since there is no company around in more than 7 km² to 10 km². The creation of value in that area can only come from that company and therefore is intended to be measured. The unit of analysis of this research is the company.

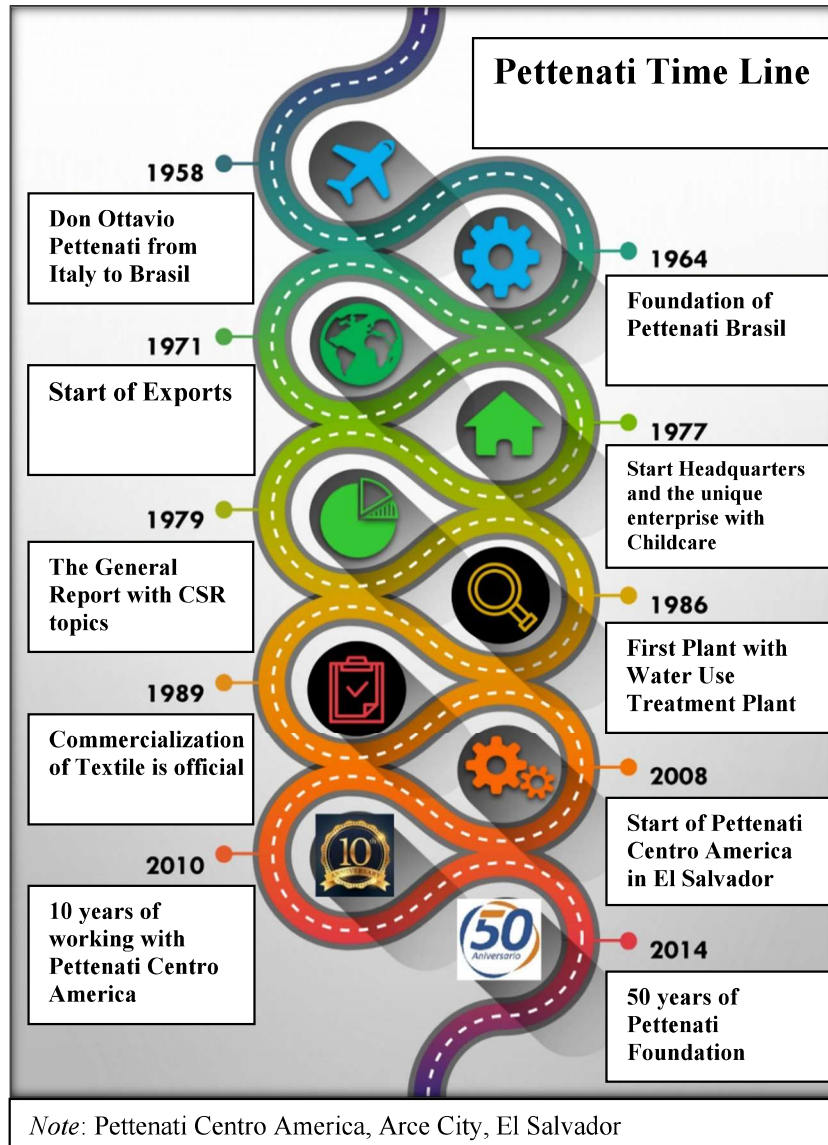
It should be noted that in all cases of managers studied by these companies from the CEO to the Human Resources Manager, there was total willingness to meet and offer 100% data complexity for each of the topics under study, and in each topic, the Manager and the expert of the company were consulted and worked to validate the data. From that perspective, the case is successful, due to there was total availability of information from Managers. These are companies with global quality standards that manage their statistics up to date. This can prevent other cases for future research related to the type of company that can serve this methodology.

RESULTS

The information obtained from in-depth interviews with the Managers of the three companies is presented below. All results have been concentrated in the general matrix of the Shared Value Model.

The matrix creates value on three levels:

1. Recognize products and markets (how targeting unmet needs generates incremental income and profits)
2. Redefine productivity in the value chain (how better management of internal operations increases productivity and reduces risks)
3. Enable cluster development (how changing social conditions outside the company unleash new growth and productivity gains)



Case 1. Pettenati, El Salvador.

Pettenati is one of the most important textile companies in Brazil. Founded in 1964, it was installed as a modest workshop that, without imagining, would become the company that currently produces and distributes more than 180 types of fabrics and exports its production to United States, Europe, Asia and part of Africa.

Pettenati has two plants in Brazil, one located in Caxias do Sul and another in Rio Grande do Sul, and its headquarters in El Salvador since 2008. The company has trained groups of Salvadoran workers in Brazil, which in turn transfer their knowledge to new workers who work in the Salvadoran plant.

From the beginning, the conquered international markets were investigated, planned and prepared, achieving the best qualified products worldwide. Advanced technology, professional improvement and environmental awareness have solidified the foundations of Pettenati's structure. Quality is no longer just a control and has become part of the company's philosophy.

In addition to the fabric production unit in El Salvador that serves the US market, Pettenati Brasil has a sportswear manufacturing unit. All units follow organizational, labor, environmental and quality global compliance standards, using in their processes the lean manufacturing philosophy. The efforts of more than 50 years have made Pettenati the main supplier of knitwear for the US sports market.

Level 1. Creation of New Products and Markets 2016-2019

In this first level (Table 1) there are two important value creations, the investment in the Social Dimension in three consecutive years in “skills and competencies” of \$ 985,000 in Kaizen, Heijunka and TPM (Total Productive Maintenance), producing a total of \$ 3.6 million in business value. The ROI (Return on Investment) is 270%, meaning that for every dollar invested in “skills and skills training” the company achieves additional equivalent savings of \$ 2.7 in defect improvement, inventory management and productivity.

**TABLE 1
MATRIX OF THE CREATION OF SOCIAL AND ENVIRONMENTAL VALUE AT THE
LEVEL OF RECONCEIVING PRODUCTS AND MARKETS 2016-2019**

Total Savings (Inventory + Defects) Business	Total Improved conditions in society (Kaizen+ Heijunka + TPM) Society	Total of Shared Value Created (Business + Society)	ROI
\$3.6 millions	\$985,000	\$4.6 millions	270%
Total (Market Growth + Stability) Business	Total Environmental Conditions (Water Access +Water Use +Water Recycling +Photovoltaic Investment)	Total of Shared Value Created (Business + Environment)	ROI
\$39.0 millions	\$2.8 millions	\$41.8 millions	1287%

Likewise, the company invests \$ 2.8 million in the Environmental Dimension through photovoltaic energy, water use, community access to water, water reuse, and this is reflected in the stability to operate and that the plant does not close operations all the year, which is estimated at least \$39 million. This would reflect a ROI of 12.8 times the environmental investment, that is, for every dollar invested in water or energy use, the company is producing additionally more than \$ 12 to the business stability and the generation of new markets, for the high standards of customers such as: Nike, Patagonia and Lululemon.

Level 2. Redefining Productivity in the Value Chain

In this second level (Table 2) there is an investment of \$ 225,000 in the Social Dimension: Rescue Commands, Parks and Soccer Fields, National Police and Red Cross, and for every dollar invested, stability and security has been generated to the company, estimated at \$ 4.5 million. In fact, this would lead to a ROI of 18 times more than invested in society or environment to represent very well what was raised in the study hypothesis.

TABLE 2
MATRIX OF THE CREATION OF SOCIAL AND ENVIRONMENTAL VALUE AT THE
LEVEL OF REDEFINING PRODUCTIVITY IN THE VALUE CHAIN 2016-2019

Total Savings (Security) Business	Total Improved Conditions in Society (Rescue Commands + Parks + Soccer Fields + PNC) Society	Total of Shared Value Created (Business + Society)	ROI
\$4.50 millions	\$225,000	\$4.72 millions	1892%
Total (Turnover Rate + Ausentism) Business	Total Improved Conditions in Society (Business Clinic + Dental Clinic + Health Units) Society	Total of Shared Value Created (Business + Society)	ROI
\$1.24 millions	\$306,000	\$1.5 millions	306%

Likewise, the company invests \$ 306,000 in the Social Dimension: Business Clinic, Dental Clinic and Health Units and for every dollar invested, decreases in the turnover and absenteeism rate has been generated to the company, estimated at \$ 1.24 million. This would lead to a ROI of 3 times more than the amount invested in society, to congruently represent what was raised in the study hypothesis.

TABLE 3
MATRIX OF THE VALUE CREATION AT THE LEVEL OF ENABLING CLUSTER
DEVELOPMENT 2016-2019

Total Generation Business Value (SMEs +Business Markets for Entrepreneurs) Business	Total Improved Conditions in Society (Soccer Teams + Schools + Cafeteria + Parks) Society	Total of Shared Value Created (Business + Society)	ROI
\$1.82 millions	\$1.76 millions	\$3.5 millions	3.6%

Level 3. Enabling cluster development 2016 - 2019

In the third level (Table 3), there is an investment of \$ 1.76 million in: 10 soccer teams, subsidizes schools, subsidizes coffee shops and subsidizes parks, producing \$ 1.82 million to the company and its workers, which translates into: Generation of other SME companies, internal promotion of the business market, to give quality products at low cost inside the company's facilities to employees and a historical increase of the net profits to 33%, being well above the performance of an average company in the results of financial profitability.

Finally, a summary (Table 4) of all the value created is presented:

TABLE 4
MATRIX OF THE TOTAL SHARED VALUE CREATED AT THE COMPANY (USD)

Total Business Value Created (N)	Total Social Value Created (S) (Social Value + Environmental Value)	Total of Shared Value Created (N+S)	Net Profit Increase (historical)	Social Value Creation Index (SVI)
\$50.2 millions	\$6.09 millions	\$56.3 millions	33%	12%

The shared value created by the company exceeds \$ 56 million as indicative values, but it is more important to highlight that the ratio of \$ 50.2 million business value / \$ 6.09 million social value may indicate a trend in certain business where this result of 8 times more than the social value invested may indicate the way to make business activity more productive and at the same time unleashing innovation in society. Likewise, at the end of this article, the Social Value Creation Index (SVI) is presented, which for this case would be \$ 0.12 for every \$ 1 of invested business value, locating the company in its initial stage of creating shared value.

Case 2. Tecnosol, Nicaragua.

Vladimir Delagneau founded Tecnosol in Managua, Nicaragua in 1998. While serving in the compulsory military service during the civil war in the 1980s, he lived in the rural community of Mulukuku, in the North-Atlantic region of the country, where he experienced firsthand what it was like to live with no electricity.

Moved by this experience, he returned to Managua with the mission of facilitating solar technology in areas of the country outside the grid range. After finishing his degree in engineering and pursuing a specialization in renewable energy in Germany, he made his first import of solar panels. The beginnings were difficult: his target customers lived in rural areas far away from the capital and had to be persuaded about the benefits of solar energy.

A series of successfully completed mega-projects with international organizations like the Inter-American Development Bank, USAID, the World Bank, and the government, gave Tecnosol the oxygen to grow both financially and geographically, becoming the rural market leader for solar energy products and services. In 2001, Tecnosol participated in E+Co and USAID’s FENERCA program, which trained clean energy businesses. Tecnosol performed so well that the following year, E+Co granted Tecnosol a US\$100,000 loan for inventory and financing for its clients. Between 2003 and 2005, Tecnosol installed over 1,000 PV (Photovoltaic) systems in the North-Atlantic region of the country with the National Energy Commission, financed by the Inter-American Development Bank. Successful installations gave Tecnosol a good name in the eyes of multilateral organizations, the company eligible for more projects and loans which propelled it forward. These and other subsequent projects resulted in the firm’s expansion, both within Nicaragua and abroad.

In 2010, Tecnosol opened its first branches in El Salvador and Panama, thanks to large installation projects of 500 and 1,000 systems, respectively. In 2012, the firm reached Honduras and grew to open a second branch in the country thanks to a megaproject of over 2,000 installations. By 2017, Tecnosol had 15 branches throughout Nicaragua and six abroad: one in El Salvador, three in Honduras, and two in Panama. Most of the branches were located in rural or semi-rural areas with the purpose of reaching communities living at the base of the pyramid.

Business Model

Tecnosol’s main operations were importing solar energy products, storing and distributing them, as well as providing post-sale services to bottom- of- the- pyramid clients in rural communities with no access to electricity. The firm offered design, consulting, supply, installation, training, and maintenance related to

solar energy projects. The firm's strategy had been small margins and high volume in order to make profits, albeit modest, as percentage of sales.

The successful completion of the massive rural installations in the 2000s resulted in a vast number of clients to whom Tecnosol could continue to offer maintenance services. From the beginning, good installation and maintenance practices, as well as training locals, were key to the firm's distribution. Because their target clients were in remote, rural communities, they needed to ensure both the quality and the availability of their products and services regardless of the distance. Tecnosol had built strong customer relationships by offering post-sale services (installation, maintenance, and training) no matter how far away clients were located. This had been possible thanks to its inclusive distribution network.

Tecnosol's inclusive distribution network included a group of distributors and micro-entrepreneurs all over the country, in addition to its rural branches. In 2001, the company began a network of certified distributors, who had their own businesses where they sold Tecnosol products bought at a discount. Their businesses varied from hardware to grocery stores. By 2016, the network had 30 distributors with a code (i.e. with a signed contract) and seven in the process of obtaining it. Once they obtained a code, distributors were categorized according to the volume of their purchases. To keep the distributors engaged, Delagneau incentivized them through discounts, training and raffle prizes.

In 2012, Tecnosol invested in a micro entrepreneurship program to better serve the increasing rural clientele. The program participants were locals called micro-entrepreneurs because after the training, they would be able to individually sell and offer services in the community, without depending on the company. All Tecnosol demanded from them was the cost of the products sold. This expanded distribution network not only helped Tecnosol sell products, but also enabled the company to provide post-sale services in distant rural communities.

There was no follow-up mechanism to know exactly how many micro-entrepreneurs were active by 2017. However, Tecnosol has subcontracted as official installers those who keep in contact. Others who keep in touch with nearby branches, have been called by Tecnosol to install or provide maintenance services. Even in cases where there is no contact, Tecnosol ensures that the micro entrepreneurs continue to be an aid to the company and that they keep work. Most micro-entrepreneurs come from agricultural areas and are also engaged in this activity. The flexibility of micro-entrepreneurship (they sell to provide services according to demand) is well complemented by the agricultural calendar in which there are defined periods of sowing and harvesting. Thus, they can work in agriculture during the harvest season, and sell products and provide services in the remaining time.

The relationship between branches and other distribution channels—distributors and micro-entrepreneurs—varies by office. In some cases, both distributors and micro-entrepreneurs sell products provided by the local branch and offer their services to customers in the same area. In other cases, distributors receive their products from the Head Office directly in the routes that depart from Managua once a month (every 20 days).

Four of the 15 branches that Tecnosol has throughout the country, more than 50% of its distributors and 30% of its micro-entrepreneurs, were located in the Caribbean area. In addition, the company concentrated its presence in the Central North area with six branches, nine distributors and 23 micro-entrepreneurs, followed by the Central South area with two branches, five distributors and seven micro-entrepreneurs. The Pacific area had three branches and less inclusive distribution channels than the other areas.

Inclusive distribution channels were more effective in rural areas with limited public infrastructure. Distributors made products available in areas not covered by branches. Micro-entrepreneurs pushed this frontier even further, bringing services and sometimes products to more communities. Distributors and micro-entrepreneurs represented marginal income for the company.

Because Tecnosol was dedicated to renewable energy, government agencies and NGOs became key partners, enabling Tecnosol's growth with massive installations in rural areas beyond the national grid's reach. In addition, and faithful to the firm's mission of bringing renewable energy to sectors of the country still in the dark, Tecnosol partnered with rural banks, micro-financing organizations, and crowdfunding platforms in order facilitate their customer's purchasing options. Access to loans and the possibility of

paying amounts throughout time made solar energy a more realistic option for the low-income segment. In some cases, the government subsidized part of the installation with the goal of improving the country's energy development.

Most of Tecnosol's sales were in rural areas (92%), with only eight percent of sales taking place in urban areas. Residential PV systems constituted the overwhelming majority of Tecnosol's rural sales (70%), followed by larger systems such as refrigeration systems, water pumping systems, peak energy systems, electric fences, and chemical waste digesters. Although Tecnosol offered the latter products, their most popular products were the ones necessary for a residential PV system: panels, regulators, batteries, inverters, and light bulbs. Tecnosol's prices—despite their slim margins—were still too high for most rural customers. This state of affairs was bound to continue, as the firm would have to invest more to reach rural clients who were farther away and had a lower purchasing power.

Since 1998, with the decreasing cost and broader supply of solar panels, local firms started selling to the rural market. Many served this segment through electrification projects—either from the government or NGOs—rather than through direct sales to final users. Most of them were microenterprises, except small competitors like ECAMI or Nicasolar. However, Tecnosol had more than 60% of the rural market share. Serving the urban market required more working capital, so international companies began to enter the picture, motivated by the change in regulations. They were mainly international firms from Spain, Italy and Guatemala, whose value proposition was low price. However, these companies were not yet strong players in the Nicaraguan market. Tecnosol had a 40% of urban market share.

For consumers in all market segments, price was the most important product attribute, ranking above brand and service. Delagneau feared that competitors' low prices would seduce consumers who were more concerned about price than quality. Thus, solar energy companies would pursue lower prices, by purchasing high volumes to international suppliers.

Solar energy had the potential of lowering electricity costs in the urban sector and reducing the ecological footprint. Nevertheless, Tecnosol had not been able to fully penetrate this market. Demand, in general, was not as high due to a lack of supporting legal framework, which made the initial investment in solar energy less attractive. In addition, Tecnosol did not have the means to invest in solar leases, which other firms—including ECAMI—were able to offer. Most of the urban installations Tecnosol completed were in commercial buildings, followed to a lesser degree by residential installations and solar heaters.

Before Law 272, potential clients had been hesitant to make large solar energy investments because in addition to the cost of the actual product, they would be charged for the electricity they produced and did not consume. Some firms and household invested in solar energy (mainly in panels and inverters) in smaller capacities to simply lower their regular utility consumption and save on their monthly bills. Solar energy production had to be high enough to save on the bill but low enough to avoid surplus charges. Tecnosol had focused mainly on the industrial and commercial sectors because their solar energy consumption and production took place at the same time: during the day. Storing energy in batteries was less common, as it represented an additional cost.

Estimating Shared Value in Tecnosol:

Table 5 shows the estimation of the values generated by the company in the three dimensions of sustainability, private (economic dimension) and social (social dimension and environmental dimension).

TABLE 5
SOCIAL VALUE RELATIONSHIP INDEX FOR TECNOSOL

Economic Value		Social Value		Environmental Value		Total Shared Value	Social Value / Private Value	
Case	Description	Cuantification (annual)	Description	Cuantification (annual)	Description			Cuantification (annual)
Tecnosol	In a period of 22 years, sales and profits have been growing until the crisis of 2019. Due to this event, credit lines were not available in banks and sales fell to US \$ 3MM in 2018 and a reduction was estimated for 2019. Branches have been closed. Sales of US \$ 6MM / year, net income of 30% or US \$ 18MM / year grew between 10-15% per year until the 2017 crisis. At present value, profits generated in 22 years represent a total of US \$ 45MM. The company has taken effective measures in the current crisis such as working with larger systems aimed at the industry (0.5MW), specializing in project management, reducing payroll and expenses by 50% and closing 9 of its 17 branches.	\$11,965,786.70	Photovoltaic solar energy replaces candles, kerosene and firewood. To date, 190,000 households (six people live on average in each household, so approximately 1.14MM of people have benefited) use solar energy provided by Tecnosol. Each home is estimated to have saved \$ 20/month in kerosene and canfin. The annual savings are estimated at approximately US \$ 46MM. There are other benefits that have not been quantified related to new businesses (stores that have ice, refrigerators and solar freezers). In the 22 years of Tecnosol, accidents in peasant households have been reduced, as well as lung diseases that mainly affected women at wood-burning stoves (pulmonary episema); the academic performance of children has improved and there is generally a better quality of life, a value that is not possible to monetize at the moment.	\$45,600,000.00	There were 190 thousand solar systems that have been installed in equipment of approximately 200 watts. It is estimated that 0.5 tons of CO2 per year per system have ceased to be emitted into the atmosphere. The value of the ton of CO2 is estimated at US \$ 25/ton. The use of firewood has stopped, taking off the pressure to deforestation, although unfortunately it is not possible to monetize the impact. The Total Shared Value could therefore be said to be a conservative estimate by a medium-sized Nicaraguan company such as Tecnosol.	\$2,375,000.00	\$59,940,786.70	\$4.01

Economic Dimension:

In a period of 22 years, sales and profits have been growing until the crisis of 2019. Due to this event, credit lines were not available in banks and sales fell to US \$ 3MM in 2018 and a reduction was estimated for 2019. Branches have been closed. Sales of US \$ 6MM / year, net income of 30% or US \$ 18MM / year grew between 10-15% per year until the 2017 crisis (see table). At present value, profits generated in 22 years represent a total of US \$ 45MM. The company has taken effective measures in the current crisis such as working with larger systems aimed at the industry (0.5MW), specializing in project management, reducing payroll and expenses by 50% and closing 9 of its 17 branches.

Social Dimension:

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Environmental Dimension:

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Shared Value:

The shared value estimate is equal to the sum of the monetary values of each of the three previous dimensions and is estimated at US \$ 59,940,787 per year

Social Value Relationship Index between Private Value or Social Value Creation Index (SVI):

Tecnosol generates more social value (social and environmental) than private. The result was 4.01 times, meaning that for every dollar of private value generated by the company, it produces \$ 4.01 of social value.

Case 3. Grupo Vanguardia, Honduras

Grupo Vanguardia locates itself in the Honduran industrial sector (providing bags for banana plantations and other items) and low-income (manufacturing toys, plastic containers) sector. A key question is whether the company should remain in the low-income market segment (Honduras is the poorest country in the region, along with Nicaragua), or move to market segments with greater purchasing power. Plastic wood for the construction industry has been considered, but it is not yet clear how to move toward value-added products directed at higher-income markets and green niches, especially in the exports sector.

The company successfully weathered a global financial crisis (2008–2009) and political instability in Honduras (2009–2010) with no financial losses, during a period of amortization of new investments. Both operating and net profits were positive in 2007 and 2008, albeit modest. These results encouraged the group to continue pursuing its strategy. Between 2009 and 2012, gross margins of recycled products rose from 32 percent to 37 percent, and sales grew between 17 percent and 27 percent annually, despite unfair competition and no fiscal incentives from the state. Between 2013 and 2015, production increased by 18 percent.

In 2012, 46 percent of the group's revenue from its plastic operations came from recycled plastic and 54 percent from virgin plastic, demonstrating that the group's sustainability strategy was essential to the company's profitability and not a temporary "cosmetic" measure. Strategic planning also allowed the business to see a reduction of their operating costs by US\$205,000 between 2013 and 2015. The financial impact of the group's sustainability strategy has been positive. The company has continued to grow: net sales grew 6.5 percent from 2014–2015, and net profits grew at 130 percent in 2014 and 281 percent in 2015. Net profits as a percentage of sales grew 3.5 times, despite the industrial sector exhibiting a low rate of net profits as a percentage of sales. This was due to the high cost of sales (75%-85%). Even then, the company's financial situation should be considered very healthy.

All of the collectors trained by Grupo Vanguardia have benefited, and the most entrepreneurial have formed their own microbusinesses that generate new jobs. In 2015, it was estimated by the company that almost 5,000 people were direct or indirect beneficiaries of the collector families. Grupo Vanguardia's main partners are these collectors. According to James Austin et. al (2004), the more organized the private sector's counterpart (in this case, the collectors), the fewer barriers there will be to collaboration. Although these collectors are not formally organized, Grupo Vanguardia has reduced barriers to collaboration by treating the collectors respectfully and as essential to the company. The innovation of bringing the base of the pyramid into the firm's value chain allows the partnership to work. The value for the company is a reduction of costs in supplying the recycling business, and the value for the collectors is an entry into the formal economy with fair pay and dignified treatment. This win-win partnership has proven strong even when faced by dishonest competition. In Alex Osterwalder's canvas model (2010), Grupo Vanguardia innovated to avoid bottlenecks in its business model by establishing key partnerships with the collectors, investing in key resources such as the specialized assets for recycled plastic production, and allowing for more variable costs (like the collectors) in the cost structure.

Grupo Vanguardia's relationship with the collectors is also an example of an innovative business-model which turns informal collectors into formal suppliers and embed them in the firm's supply chain. This model could also be replicated not only in the developing world but also in less developed areas of the world's most developed countries.

The competitive advantage that sustainability has given to Grupo Vanguardia can also be analyzed in terms of John Elkington's triple bottom line: economic, environmental, and social. The company has increased its profitability (and cost savings), it has improved the environment by engaging in the environmentally friendly business of recycling, and it has improved the livelihoods of people who were previously unemployed or underemployed, helping them move to more formal jobs where they experience less uncertainty, are treated with respect, receive training, and are fairly paid.

By 2015, Grupo Vanguardia had achieved major savings thanks to the eco-efficiencies they had put in place and the entry of recycled plastic (of which they produced increasingly more thereby replacing imported virgin plastic). Additionally, Grupo Vanguardia saved approximately 134,741 metric tons of CO2 emissions between 2010 and 2015 (the equivalent of removing 24,679 automobiles from the road) and over 1,060,452,475 Kwh (to 2013: the equivalent of three months of the total energy consumption for the country of Honduras). The company also helped to develop more than 300 micro-entrepreneurs and create more than 1,500 new jobs.

Grupo Vanguardia has also begun a reforestation project with consulting help provided by Fundación Hondureña de Investigación Agrícola (FHIA). This project consisted of planting mahogany trees in the outskirts of San Pedro Sula. The project had begun on company property and as of 2014 included the reforestation of another company property. The project was selected to help lower the company's carbon footprint, lowering their carbon emissions. Grupo Vanguardia was also more efficient in regard to their waste production and water consumption. They managed to lower waste as a percentage of each pound of plastic from 0.77 percent in 2010 to 0.41 percent in 2015. In 2010, their water consumption totaled US\$17,642; in 2015, this was lowered to US\$12,378.

In addition to its successes, Grupo Vanguardia's inclusive business model does face some shortcomings. First, though the business model has proven to be solid and effective in implementing the changes pointed out throughout the case, the products the company sells are of very low-value added when it could be producing other products with higher value added with a sustainability focus. In addition, the current model promotes mutual trust as the relationship with the collectors over time shows but lacks a formal incorporation of the collectors into the company's value chain making them vulnerable to competition from other firms. Lastly, the legal framework in Honduras does not provide a solution to incorporating informal workers, of which the collectors are only one group out of many others, into the formal sector and the benefits this sector provides, improving not only the collectors' quality of life but also the supply chain of the firm.

CONCLUSION

Although Grupo Vanguardia had been successful in achieving several of its business objectives, challenges still lie ahead. As the company was not on pace to reach its 2016 growth goals, Grupo Vanguardia must determine how to reach those goals and continue its historical success. Searching for untapped green niches would be one place to start. One option is to begin creating higher value-added products, such as "plastic lumber" and recycled bricks, to further diversify the product line and target more affluent end users. Another option is to expand into international markets. A potential challenge they would face in this direction is increased competition for the raw material (in this case trash or plastic waste) and subsequently how to maintain a constant supply of these materials (which is also tied to maintaining the links with crucial allies such as the collectors discussed throughout this case).

A second challenge facing the company is the security situation in Honduras. As insecurity causes some companies that provided Grupo Vanguardia with plastic waste to leave Honduras and may deter other companies from establishing new operations, the supply of plastic waste available in the Honduran market may shrink. Although difficult economic times in Honduras has led more people to turn to waste collection, potentially benefiting Grupo Vanguardia, the lack of a formal collections sector could also lead to an increase in violence and gang activity.

A third issue Grupo Vanguardia must consider is the institutional setting in Honduras. That setting includes the already unfavorable business environment Grupo Vanguardia faces (due to Honduras's

security issues and a weak economy), as well as the challenge of ensuring a recyclable plastics supply. Unlike other Latin American countries such as Peru, Honduras provides no state incentives to nurture socially responsible companies or help formalize the informal sector of the economy.

Committed, however, to its vision, organizational structure, its suppliers, and the environment, Grupo Vanguardia continues to adapt its inclusive business model and revise its strategy to secure the firm’s long-term economic success and continue providing benefit to the over 5,000 Hondurans currently partnered with Grupo Vanguardia. Though part of the durability of the company’s business model’s hinges on the unfortunate situation in Honduras (namely, that the country is poor and thus provides a steady supply of both labor and raw material), Grupo Vanguardia has forged a network that would be difficult for a competitor to replicated quickly. In response to other companies beginning to duplicate aspects of Grupo Vanguardia’s business model—buying plastic waste from providers in the informal economy— Grupo Vanguardia has provided loans to their suppliers to increase their working capital at no extra financial cost. To further assist their suppliers, Grupo Vanguardia is constantly on the lookout for new companies generating recyclable waste. Grupo Vanguardia has offered to handle the waste produced by these companies and provide this waste to their plastic suppliers, helping them increase their monthly plastic collection.

Grupo Vanguardia’s best practices, engaging in recycling and incorporating informal workers into its value chain, have significant policy implications. As collectors become suppliers and move into the formal economy, they become potential tax payers, meaning more revenue for the government, and they gain better access to education and health services. If a tragedy or natural disaster were to occur, they would have access to social security. Grupo Vanguardia’s model is also replicable, an example of how a private firm has been able to decrease the amount of trash left in public places and support working people to enter the formal economic sector—both public goods that are usually considered the responsibility of the —and profit at the same time.

Estimating Shared Value in Grupo Vanguardia:

Table 6 shows the estimation of the values generated by the company in the three dimensions of sustainability, private (economic dimension) and social (social dimension and environmental dimension).

**TABLE 6
SOCIAL VALUE RELATIONSHIP INDEX FOR GRUPO VANGUARDIA**

Case	Economic Value		Social Value		Environmental Value		Total Shared Value	Social Value / Private Value
	Description	Cuantification (annual)	Description	Cuantification (annual)	Description	Cuantification (annual)		
Grupo Vanguardia	Grupo Vanguardia is a Honduran consortium of five companies. Ecoplast and Vanguard Plastics are part of the consortium. The first one works with recycled plastic (post-industrial, post-consumer) and the second with imported virgin plastic. Around 54% were sales from products made of virgin plastic. However, in 2013, monthly sales were already US \$ 1.5MM, and 49% of sales were from products made of recycled plastic. This value is estimated at \$ 8,820,000.	\$8.820.000,00	Collecting families become part of the supply chain of an Honduran company that has redefined its business model selling plastic products using recycled plastic in a good part of its production. At the end of 2015, there were 221 plastic suppliers with an average of six employees each one. By 2018, there was a base of 218 suppliers and a value chain of 33 thousand people benefiting from 8300 direct and indirect jobs. These providers generate income for 872 families estimated at \$ 450 per household per month, which would be equivalent to 4.7 million dollars annually. Thus, investments in the community in 2018 were \$ 17776.33	\$4.726.576,00	There were 154 million pounds of plastic that have been processed from 1999 to 2017 plus 9,790,455 in 2018. It is estimated that US \$ 1 = 24.59 Lempiras and that the plastic pound has a local cost of 0.66 Lempiras in the period of 1999-2017 and 1.04 Lempiras in 2018. In addition, 134,741 MT of saved CO2 emissions were reported in 2015, at US \$ 25 / ton. These savings are equivalent to 1,060,452,475 KW at a price of KW of US \$ 0.956. To this is added a total of \$ 4,718,720 opportunity cost if this plastic had reached the dump.	\$14.536.445,00	\$28.083.021,00	\$2,18

Economic Dimension:

Grupo Vanguardia is a Honduran consortium of five companies. Ecoplast and Vanguard Plastics are part of the consortium. The first one works with recycled plastic (post-industrial, post-consumer) and the second with imported virgin plastic. Around 54% were sales from products made of virgin plastic. However, in 2013, monthly sales were already US \$ 1.5MM, and 49% of sales were from products made of recycled plastic. This value is estimated at \$ 8,820,000.

Social Dimension:

Collecting families become part of the supply chain of a Honduran company that has redefined its business model selling plastic products using recycled plastic in a good part of its production. At the end of 2015, there were 221 plastic suppliers that had 6 employees each one. By 2018, there was a base of 218 suppliers and a value chain of 33 thousand people benefiting from 8300 direct and indirect jobs. These providers generate income for 872 families estimated at \$ 450 per household per month, which would be equivalent to 4.7 million dollars annually. Thus, investments in the community in 2018 were \$ 17776.33.

Environmental Dimension:

There were 154 million pounds of plastic that have been processed from 1999 to 2017 plus 9,790,455 in 2018. It is estimated that US \$ 1 = 24.59 Lempiras and that the plastic pound has a local cost of 0.66 Lempiras in 1999-2017 and 1.04 Lempiras in 2018. In addition, 134,741 MT of saved CO₂ emissions were reported in 2015, at US \$ 25 / ton. These savings are equivalent to 1,060,452,475 KW at a price of KW of US \$ 0.956. To this is added a total of \$ 4,718,720 opportunity cost if this plastic had reached the dump.

Shared Value:

The shared value estimate is equal to the sum of the monetary values of each of the three previous dimensions and is estimated at US \$ 28,083,021 per year.

Social Value Relationship Index between Private Value or Social Value Creation Index (SVI):

Grupo Vanguardia generates more social value (social and environmental) than private. The result was 2.18 times, meaning that for every dollar of private value generated by the company, it produces \$ 2.18 of social value.

DISCUSSION

The results obtained from the case studies are quite clear, due to in all areas, the amount invested in society is generating economic value and can produce up to 2 or 4 times the social value initially invested. It would be very interesting to continue measuring values in different business lines, which is already being developed thanks to INCAE Business School in different countries.

In the same line of discussion, **is there any methodology to Measure Shared Value?** The answer is yes, after finishing this seminal case, it is clear that the model designed with the meta-matrix that summarizes Professor Porter's theory of shared value at Harvard Business School, can be taken very well in studies of measurements in different countries and, particularly, with a focus on Latin America. This allows the private company as a productive unit of the economy to generate social value (social and environmental dimension) that is expected.

At the methodological level, the Social Value Creation Index (SVI) is proposed, presented in this article thanks to the contribution of Professor Perez-Pineda of INCAE Business School.

$$SVI = 1 / (ECV / SV + EV)$$

SVI = Social Value Creation Index

SV = Created Social Value

EV = Created Environmental Value

ECV = Created Economic Value

Is there a relationship between the creation of Shared Value and the Return of these Investments?

It is obvious, from the study results that there is a return on investment, but apparently this has a line of action and that, by solving many social problems, wealth can be generated and it grows rapidly, which is compatible with Professor Porter's proposal. When you invest in major social problems such as lack of training, access to drinking water, access to energy, education, safety and health, it is when these dollars invested become magical because in some cases, they can be translated into business value at a ratio of 12 to 18 times the investment value, as is the case of Pettenati.

This is just the first business case and motivates to develop more research with all professors who have helped to shape the first three case studies and collaborated in presenting this regional approach at the Harvard Business School in December 2019.

Summing up, we can conclude that the “Shared Value creates a virtuous circle of business where it begins to increase the Social Value and the Environmental Value in the long-term, thus improving the cluster and communities conditions in general where it sells and operates; however, in order to be a virtuous and reinforcing circle, this same social and economic value is reinvested in business, to increase economic value, and the circle continues to grow, so that the company's growth and society progress is simultaneously exponential”, This is a kind of positive spiral that reflects the reinvestment of all values and that can be quantified through the productivity of the company and the prosperity of society.

Shared Value and Social Progress

The Social Progress Index (SPI), introduced in 2013, is the first holistic measure of social outcome that has already been adapted at the firm level by the Progress Social Imperative and provides a robust tool from which a firm can measure the impact to and from society. Beyond the usefulness as indicator of social progress, the SPI provides a measure of the capacity of a society to meet basic human needs, to enhance the quality of their lives and to create the conditions for all individuals to reach their full potential (Porter, 2016).

Measuring the impact of shared value from business is closely related to the measurement of how well the firm did in reconceiving needs, products and costumers. It is also related to whether the company meets societal needs and provides products to served and undeserved customers and communities. Porter (2016) has argued that the productivity and success of a given company on the local social and economic environment depends on the level, skills and health of the employees. Firms can also transform socioeconomic conditions via a solid shared valued strategy and on a redefined business model. Addressing the societal needs requires the firm to know whether employees have access to affordable housing, the socioeconomic conditions of the locality and whether families have access to basic products and services such as water and electricity.

All these variables are included in the matrix of the Shared Value Model proposed in this study and are already included as part of the SPI measurement. Michael Green, from the Social Progress Imperative, acknowledges that the SPI should help companies to further embed the idea of shared value because it will give them the data to help them prioritize which social issues to help address in any particular country, region or locality. Indeed, recognizing products and markets, the first level of value creation, and Redefining Productivity in the Value Chain, the second level in the matrix proposed in this study, are both directly related to the Basic Human Needs and the Foundations of Wellbeing components of the SPI. The third level in our matrix, Enabling Cluster Development, is directly associated to the sub-component of opportunity in the SPI, and provides information on personal rights, freedom, tolerance and inclusion as well as access to education.

Pursuing the Shared Valued aligned with social progress should rely on an effective structure based on close collaboration with all stakeholders: government, business and civil society. From government come policy choices that need to be aligned with the true societal needs, while businesses can provide competitive conditions and investments, and finally the civil society can help integrate social capabilities.

A future natural extension of the Shared Value model will be to provide detailed information to link the models of value creation to SPI in each of the three levels of the matrix.

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