
Proposal for a New Business Model for Nexans Pabu for the Brazilian Market

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ABSTRACT

Subject: The purpose of this work is to take advantage of an opportunity to improve the sales strategy and business model of the Nexans PABU business unit - European manufacturer of electrical connection accessories for cables to the Brazilian market, providing better integration between the supply chain and the market demand. **Application:** This opportunity involves a focus adjustment for the organization's management, about how to increase the value recognized by the customer while reducing physical inventory costs and optimizing sales human resources adding a strategic alliance with distributors. **Innovation:** The innovation contained within this process is about the reduction of supply chain steps, optimizing product offer at the national market. **Impact:** Decisions to adapt an internal sales strategy switching partially to a more horizontal model is an economic impact that can increase the transaction value, reduce costs and financial risks for Nexans, including the participation of strategic alliances to growth sales and market share. **Complexity:** Organizational changes due to the pandemic COVID-19 are a reason that impacts the evolution in sales, causing a human resources and physical resources reduction. The currency exchange rate increasing in Brazil and the organizational decision to reduce complexity in the operations with no local stocks is a critical but decisive point for a new business model proposal. **Methodology:** This work was elaborated based on the methodological proposal of problem solving and exploration of opportunity, by Marcondes, Miguel, Franklin & Perez (2017). The analysis of the internal and external moment of the organization and the local market is supported by a customer recognized sales value survey, searching for a balance between the currency floating exchange

rate risk to the imported products, and the present competition with established distribution channels.

Keywords: Power accessories; B2B market segment; business model

1. INTRODUCTION

The electricity infrastructure market has several segments and sub-segments in your supply chain. Part of this diversity is composed by power generation projects from government auctions, power utilities contracts and concessions for electricity transmission and distribution network, transport infrastructure such as trains and subways lines expansion, industries, OEM equipment manufacturers, commercial and health facilities as well.

The access to those electricity market segments takes different paths. Power utilities contracts, for example, requires a heavy technical homologation phase, power generation government projects such as wind, solar and hydroelectric plants are made up of several EPC companies and consortia, such as civil and electromechanical contractors, including equipment manufacturers integrating different services and products to full fill the planned scope, industries with small and medium infrastructure projects with regionalized and faster product consumption with the installers and from electrical parts distributors and resellers.

Understanding the proportions of each of these segments and deciphering the demand way is a complex task, as well as the technological products offered. A local country market that receives 16 billion reais as annual investment is quite broad and can be profitable in each of these segments with the correct strategies to reach a certain segment search, such as appropriate deadlines, product technical approvals, purchase volume, after sale support, etc.

In this context, the multinational company Nexans, one of the largest manufacturers of electrical cables and electrical connection solutions in the world, has its cable factories in several countries as example of Brazil. Additionally has its own line of power connection accessories for cables manufactured in Europe for over 80 years and still participates partially at the local market segments. At the present time, after the Covid-19 pandemic, the group has restructu-

red worldwide minding and its customer base through an strategic plan, reviewing the businesses in which it will keep participating directly or through partners, and the complexity their product line. It is time to optimize supply chain, operations and business model to subsist and work based on results.

2. INVESTIGATED OVERALL CONTEXT

Nexans SA is a 1897 French company manufacturer of cables and solutions for cabling with global presence. It has 120 years of existence and currently 34 factories in different countries, with a global turnover of 6,5 billion euros and 27 thousand employees (Nexans, 2019). Historically, in 1912 it was acquired by the French group Alcatel, in Lyon, France, starting to operate under the name of *Compagnie générale des câbles de Lyon*. Through decades of expansion and diversification acquired industries in several countries and expanded product segments, switching in 1986 the name to Alcatel Cables and Components. In the year of 2000 has decided to split the businesses out and creates the branch Nexans, one of the largest cabling and cabling solutions industries in the world, opening its capital at the Paris Stock Exchange.

In Brazil Nexans became the successor of Alcatel Cabos and in 2003 acquired the assets and operations of the company Furukawa Cabos Energy division, starting at the local market. In 2008 acquired the Grupo Madeco, the largest South American cable manufacturer at the time, with production plants in Chile (Madeco), Colombia (Cedsa), Peru (Indeco), Argentina (Indelqui) and Brazil (Ficap), increasing the local product portfolio and marketshare for whole South America.

The company produced an average of 20.000 tons of aluminum cables and 10.000 tons of copper cables (Nexans, 2019) at the 2 Brazilian facilities. Several cable models are produced as shown at Figure 1 and additionally importing complementary cable related products from other Nexans units around the world integrating the product sale portfolio for local market.

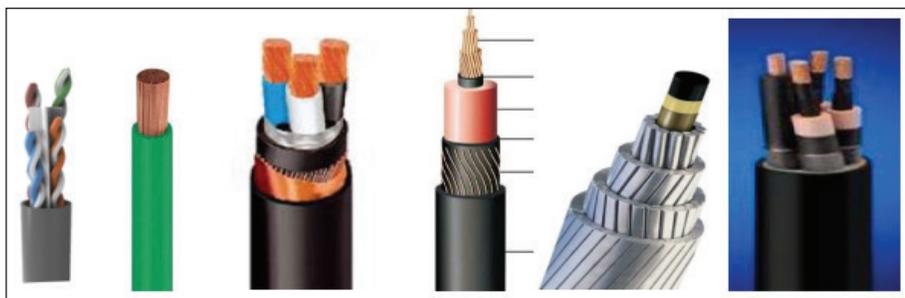


Figure 1 Cables produced by Nexans in Brazil

Source: Nexans Catalogues (2020)

The organization's strategic mission in Brazil summarizes to offer and sell solutions in cables and cabling systems focused on customer's performance, being pioneers and promoting the Nexans brand.

Nexans Brasil sales structure is divided into four general segments according to the market and customer types. The four market segments divisions has different business models such as long term contracts, special projects products on demand, standard products for installers, distributors with local inventory strategy. Segments names as D&I - Distributors and Installers, U&O - Utilities and Operators, ISP - Industrial Projects and Solutions and LAN - Data Cable.

One of Nexans' business units worldwide is PABU - Power Accessories Business Unit - a group subsidiary responsible for manufacturing power accessories to be connected at the cables and equipments. Those accessories are complementary and mandatory products to energy cables connecting them to specific equipment such as power transformers, switchgears, power motors, turbines, panels, etc.

The European division PABU manufactures and sell products directly to customers in the European Union countries, but to the other continents the business strategy is to use the group's subsidiaries and local plants in each country to import and commercialize to local markets, using the local branch structure.

Nexans Brasil, beyond their extensive cable product line complements the local portfolio importing from Nexans PABU the connection accessories, as illustrated in Figure 2, attending mainly

projects with a direct order path, where the products are not kept in local stock or inventoried unless based in a purchase contract. Although Nexans PABU has a differentiated intercompany selling price to the company subsidiaries, the purchase model is the same as with any other client. On this model the subsidiary local company is free to quote and define its own mark-up price with no intercompany strategy alignment or market price level analysis.

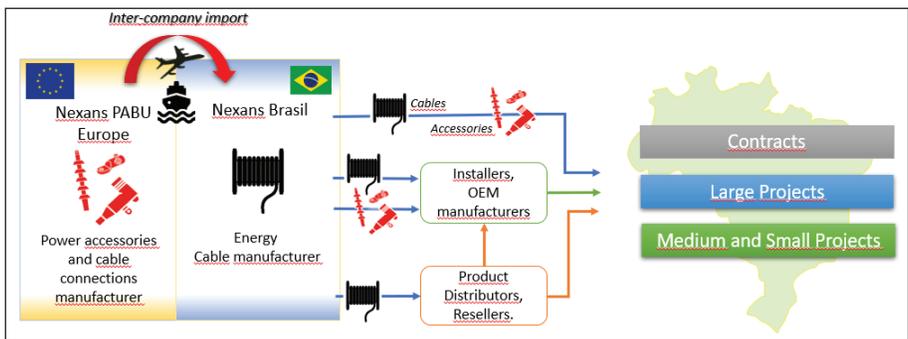


Figure 2. Nexans PABU's business model for Brazil

Source: Prepared by the authors, based on the Nexans process (2020)

There are no defined commercial guidelines to sell imported products through local stakeholders or some price and sales inventory strategy, the sale runs through the traditional process of quoting and import according to the moment demand, with costs and exchange rates fixed at the time of quotation.

The PABU division carried out a primary analysis of the Brazilian market based on the quotes history, contracts negotiated previously and sales during the Years 2017, 2018 and 2019, and for mapped main segments, where there is an estimated market size of 13 million euros for medium voltage accessories. Included on this amount, contracts with power utilities represent the largest sales amount on the quoted market of 60%, followed by industries and installers with medium and small projects reaching a 10% slice with distributors and resellers with 15% of accessible market, and another 15% for large infrastructure projects from power generation government auctions through EPC companies, where included OEM

equipment manufacturers, as shown at the illustration - Figure 3. The splitted market segments have also different business times, demands and sizes, as resumed at Table 1.

Table 1. Power accessories market segments and main demands

Market Segments	Price and Volume per sale	Delivery time demanded
Power Utilities Contracts	Two years contracts, large volume, fixed price on contract	60-120 days
Large Infrastructure / Power Generation Projects	Medium Volume, Price per Project Negotiation	30 to 90 days
Small and Medium Projects / Industry / Installers / resellers	One-off, Small Negotiations	Less than 45 days
OEM / Industrialization	Project by project, small-medium Negotiation	30-90 days

Source: Prepared by the authors

The complexity of the market is visible at the extremes: the large power utilities with less than 10 players in the market concentrating large contract volumes with long lead times, compared to industry, installers, and resellers at the opposite side with small, pulverized and regionalized sales in hundreds of customers throughout Brazil, considering practically immediate delivery times from distributors and resellers inventory.

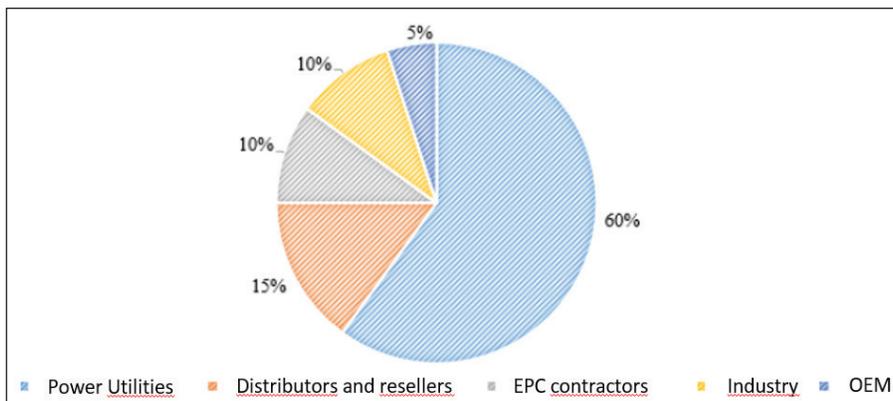


Figure 3. The power cable accessories market in Brazil

Source: Internal data - Nexans PABU (2019)

Nexans PABU started power accessories commercialization to Brazil at 2013 initially focusing at industrialization and renewables market segments, reaching a 10% market share in 2019 considering the expansion to other segments as power utilities, industry, OEM, according to Nexans PABU information (Nexans, 2019).

Among the local competitors should be noted that all manufacturers are foreigners and produces its product line outside Brazil. The local sales strategy may be different between them. Prysmian, TE Tyco and 3M have some production facility in Brazil for other product lines, selling the imported power accessories together with the local manufactured goods, with a similar strategy of low and partial own inventory but primarily promoting the inventory of their resellers and distributors (no resellers brand loyalty or exclusivity) as sales channels. Meanwhile, other competitors as NKT and Chardon have agreements with distributors and representative companies ordering directly from their foreign factories in Germany and China, which provides a lower cost for competition, as less or none intermediaries between the manufacturer and the distribution branches. The strategy to maintain local inventory for shorter delivery times is also present considering the time to market.

3. OPPORTUNITY DIAGNOSED

The initial hypothesis is focused on Nexans commercial and supply chain strategy update necessity between Nexans Brazil and PABU considering the local power accessories target and potential markets and stakeholders, to be driven by customers' demand and their perceived value.

Procedures adopted in the diagnosis phase

A planned survey was conducted with customers about their demand, negotiation steps, sales and delivering lead time using qualitative data, checking what are the key competitive advantage points for which the customer would be willed to change their way of purchase and what are the reasons for. The focus on this field research was mainly two market segments, the customers from industry and installers segment, responsible for small and medium infrastructure projects, and secondly EPC contractors for large power infrastructure government auction projects, that together represents around 40% of the national accessible market, according to figure 3. This research process considered employees interviews at decision or purchasing influence positions from customer companies as, engineering and operations coordinators, procurement managers included on the project pricing analysis and project work schedule. The method used was a key topics interview with open questionnaire, not necessarily sequential questions, as indicated by Richardson (1999), carried out by telephone or during a routine business visit.

The tabulation of the survey responses was based on the technique of interpretive analysis of Flick's (2009) text, topic by topic, considering a comparison of the answers between the two target segments, seeking to contextualize the answers with the market and business environment information raised in the opening paragraphs. Synthetically, the responses obtained from customers outputs in context were:

- *For medium voltage infrastructure or electromechanical projects, what is the percentage of the cable product in the Capex (Capital Expenditure) of the project?*

It is possible to see that there is a proportionality between the values represented by the Cable as a primary product in the Capex,

on average from 20 to 40% of the value of the equipment and inputs of the project, with the ranges reported in each segment:

☑ Small/Medium Projects (installers for industry): between 15 to 50%;

☑ Large Projects (EPC contractors): between 20 and 60%.

• *Are there delivery deadline delays or delivery issues for the cable product in projects previously supplied?*

It is possible to notice that in both segments delays occur, but delivery delays are more common in the Medium and Small Projects (installers and industries), where cable products are more standards and lead times are shorter to project execution.

• *What problems does the delivery delays cause? Is there contractual fines or measuring problems at project stages?*

The consequences of delays in both segments are contractual fines and penalties on the financial receipt of the project, monitored and paid by measuring the completion of each step by the end customer (project owner).

• *About Power Accessories products, specifically Terminations, Connectors, Splices for complementary use in Medium Voltage Cables, at which stage of the project happens the purchasing today?*

The definition of cables and accessories purchases in the Medium and Small projects (installers and industries) usually takes place at the beginning of the Project execution, where cables and accessories are standard and previously defined. These are projects with a shorter execution time. Project purchases from contractors (EPC) considering large projects happens separately or partially for cables and accessories during the project execution. There is separated moments for technical definition and purchase for the cable, as the main product and greater amount occurring first, and the accessories definition and purchase on next and later project steps.

• *What percentage does the Accessories represent of the project total amount as electromechanical materials?*

Power Accessories were identified in both segments between 1 and 7% of the total amount of electromechanical materials acquired for Small, Medium and Large Projects.

• *What are the most quoted and purchased accessory brands for projects?*

The brands commonly mentioned in the two segments were: Small/Medium Projects (installers for industry): 3M, NKT, TE Tyco Kit, Prysmian and Nexans, and for Large Projects (EPC contractors): NKT, TE Tyco, Prysmian and Nexans. A special highlight for 3M brand for small and medium projects (installers and industry) having a strong distribution and reseller channel at regional level with strategic local inventory.

- *Does any of the accessory suppliers offer, after sale, on-site installation training?*

For the segment of small and medium projects (industry and installers) the after-sales technical support is very low, much probably because the products are more standard. To the larger projects with EPC contractors there is mention from customers requesting installation training linked to the purchase order and to be offered by all manufacturers, as the products are more specific.

- *What are the most important or relevant criteria when purchasing the accessory product?*

All customers in both segments rely on the triangle: price-term-quality, but the delivery time of power accessories is mentioned by 100% of those companies as a decisive factor in the purchase, considering the product follows the quality criteria defined by the project, and a remark considering a price to be at the market average. Part of interviewed companies in both segments reported to agree to pay more than market's price average for a product with a shortest delivery time focusing to meet project schedule and avoiding fines for delays, which are much higher than the price difference for the product specifically. This payable price analysis takes in account the fact the accessory product represents only 1 to 7% of the project scope, a low percentage on the project amount.

- *Is there any interesting benefit if the cable supplier is the same as the accessories supplier? What would it be?*

In both segments, 100% of customers responded positively. It would be a beneficial competitive differential either by the technical safe, as complementary products, as by simplifying the negotiation and purchasing process management. A single customer in the small and medium segment projects (installers) pointed out not to be interesting, as this would reduce the option range for accessory

suppliers, since most part of manufacturers do not produce both cable and accessories.

- *If the terms, invoicing and delivery conditions for cables and accessories were the same, it would be a competitive advantage?*

In the segment of installers and industries (small and medium projects) - where purchase of the cable and accessory usually takes place at the beginning of the project - negotiation of the products together was reported in 100% of answers as an important advantage. For the large projects with EPC contractors - who buys those products in larger quantities and at different project stages - the single condition was less accepted as an advantage.

- *What could be offered at the negotiation phase to make a single purchase (cable+accessories) happens? Immediate delivery? An installation training? Other?*

For small and medium projects, the most mentioned factor, in 80% of answers, is to have those in a single delivery, cable and accessory. However, also other mentioned answers were: more competitive pricing and installation training included. For the large projects of EPC contractors, the shortest delivery term was the most mentioned, even if the accessories and cable are purchased and delivered separately. Other mentioned points: having the same commercial terms for both product lines and technical installation training.

- *What other aspects were not considered on the survey and would be interesting as competitive advantage?*

A point mentioned by more than one customer was the importance of short term feedbacks to quotations and if the quotation for cables and accessories could be managed by the same sales person, not being necessary to deal with two different areas on the same supplier.

By evaluating the market conditions and scenarios of the actual macroenvironment, it is possible to see some main influencers for the organization's business, summarized considering a PESTEL analysis (Johnson et al, 2007).

- ☑ During 2020, with the occurrence of the Covid-19 pandemic, the retraction of markets and economies in order to protect themselves from the effects of recession, has limited the investments and raised the exchange rates of foreign currencies such as the Dollar and Euro

comparing to local currency (Real) in Brazil (Economia, Exame, 2019). Additionally, and cascaded, the companies' layoffs programs part of internal reducing costs strategy to maintain their local operation and protect their financial flow.

☑ Despite the Brazilian government policy of reducing the interest rate seeking to sustain domestic growth and keep the currency value, during the year of 2019 and 2020 the exchange rate rising for the dollar and euro against the real reduces demands for foreign products in emerging countries (Bloomberg Economy UOL, 2020). The exchange rate effect is a risk associated with sales processes for no established inventory or hedged operations, subjecting each spot sale to the exchange rate of the political moment of the country.

☑ In recent years, the Brazilian infrastructure energy market has been the target of giants foreigners companies acquiring public utilities concessions for distribution and power generation. An example is the Italian company ENEL, current owner of the former Eletropaulo – São Paulo's city electricity company, which was acquired for 5,5 billion reais in 2018 (G1 Economia, 2018). ENEL also incorporated the former state-owned CELG - Cia Energética de Góias, Ampla (Rio de Janeiro) and COELCE - Cia Energética do Ceará, plus the investment on renewable power generation projects from its arm Enel Green Power, with investments on government auctions.

☑ the year of 2020 was strongly affected by the global Covid-19 pandemic (Vendramine, Nobre & Vieira, 2021), but even so, the growth of the Brazilian industry segment for 2021 were estimated at 4% (Economic activity: review of growth forecasts 2020/2021, IPEA, 2020). According to the Auctions published by ANEEL (Brazilian autarchy that regulates country energy market), two more auctions were planned for bidding for renewable power generation projects for 2020, in addition to São Paulo State Government investment on subway transport expansion in 2020 (G1 São Paulo, 2020).

During 2020 facing the Covid-19 Pandemic, Nexans global strategy has followed market trends reducing local inventories and char-

ging heavy terms to low quantity purchasing customers, defining a new higher minimum amount for each invoicing, and forwarding some of them to a distributor or reseller. Together with the aspects discussed on previous paragraphs, it is identified the organization has autonomy, independence, and low integration between business units (BUs), and even the complementary products are offered in local market as an uncoordinated manner.

By the microenvironment, it is possible to also see some main bullets at company's business, keeping the PESTEL analysis (Johnson et al, 2007):

☑ Nexans within its energy solution scope has the potential to diversification (Johnson et al, 2007) of products and solutions. Company's portfolio has the main product (cable) but also the mandatory complementary connection accessory. A secondary data research among competitors present in Brazil indicates this differential is a benefit of only two companies in Brazil, the French Nexans and the Italian Prysmian. The benefit of product synergy can be obtained by an activity, process or product that complements each other (Johnson et al., 2007), and may have a greater effect by combining product offers.

☑ According to the performed customer survey, a business key point for large, medium and small projects segments is the product lead time. Delays in a complex project schedule as a power generation plant generates fines, penalties and impact on the measuring project steps in order to enable payments during the project implementation. The strategy of invest in some inventory can be previously evaluated by the management as a frozen working capital, however, if analyzed in the aspect of an efficient capital allocation it can generate new sales at not reached segments and participation in new markets and projects. This is also called competitive risk, where the company's differentiated offer can create value for which some customers are willing to pay (Hitt, 2011). However, considering the current moment and corporate decision reducing internal costs due to Covid-19, a possible choice is an strategic inventory to be shared with partners and stakeholders, such as distributors and EPC, offering some commercial benefits to them to maintain their inventories.

☑ Industries and installers, of small and medium projects with resellers and distributors represents an interesting 25% market share of the accessible accessories market in Brazil (Nexans, 2019). Nexans currently does not have a strategy or partnership with distributors or resellers, and there is no pricing differentiation for those stakeholders.

☑ According to the company's internal verification, actually Nexans Brasil does not practices combined sales pricing strategy for cable and power accessory. This competitive advantage may be favorable on the price negotiation and sales for complex projects, and in the long term reduce or eliminate competition (Johnson et al, 2007), which cannot offer this way, including the technical support to the complete solution itself as an additional benefit.

Opportunity defined

Based on this partial diagnosis, the opportunity described identifies a gap on the sales and supply chain strategy for power accessories imported from the Nexans PABU division considering the market segments of small and medium projects (installers and industries) and large infrastructure projects (contractors EPC) in Brazil. It is estimated these two segments represents 40% of local accessories market, where Nexans Brasil already has business offering its main product (cable) but some deficiency in the sales to the imported connection accessories, complementary to the cables. These segments have specific demands as lead time, price and technical support that can be achieved with a more appropriate supply chain strategy and sales policy from PABU. A strategic segmentation of target markets and customers among the direct sales and the regional distributors and resellers channels can increase presence, sales and perceived value by the customer. Regarding the technological knowledge of the brand for cables and accessories it may contribute for market share and sales growth, as the mission declared by the company to be a solution provider and pioneer.

4. PROPOSED INTERVENTION

According to Teece et al. (1997), the fundamental question in the field of strategic management is how firms achieve and sustain

competitive advantage. In this path, support closely the demand of each market segment with some dedicated sales strategy is imminent. From the specific market study and performed customer survey, each market segment needs are briefly represented in a column at the Table 2.

From the view of Nexans Brasil organization's position to do not keep local inventory for imported goods, to support sales and projects with shorter deadlines, Nexans PABU requires new strategy with some stakeholder partnership to meets the demand, as well as other competitors uses distributors to gain capillarity and short-term delivery options. The Table 2 summarizes an initial proposal splitting the supply chain channels by market segments with other stakeholders, describing the proposed value to be created and the use of opportunities.

Table 2. Stakeholders, demands and value created with the segment strategy

Market Segment	Responsible Stakeholders	Demands/ Responsabilities	Value Created/ Customer Benefit
Large and long-term contracts	Nexans Brazil	Specific product technical approval and homologation; special product support and warranty. Manufacturer direct sale and contract management. Adequacy to customer's local standards;	Contract managed within the Nexans Group. Avoid fines and delivery delays by controlling supply chain. Technical Warranty and direct support from the manufacturer.

<p>Large infrastructure projects</p>	<p>Nexans Brazil <u>and</u> Distributors and key integrators on the segment</p>	<p>Offer and negotiation Main and complementary product line (cable+accessory). Third part stakeholders direct import from PABU plants, considering to keep an own local strategic inventory.</p>	<p>Possible sale of Cable and Accessory together, providing commercial, technical and trading benefits with one logistic. Third part key distributor can support directly in case of urgent deadline (considering inventory). Key account feature, with pre-defined customer indicated by Nexans to stakeholder. Most competitive price for resale.</p>
<p>Medium and Small Projects</p>	<p>Distributors and homologated installers.</p>	<p>Direct import from Nexans PABU; Keep local inventory for standard products for shorter delivery term.</p>	<p>Geographic capillarity; Greater presence in local customers; Inventory and shorter lead times; Adequate/competitive prices for resale.</p>
<p>OEM/Industrialition</p>	<p>Equipment Manufacturers such as transformers, turbines, panels, incorporating OEM parts from Nexans.</p>	<p>Fixed price table from PABU Nexans considering foreign currency prices, direct import with minimum annual quantity to the business.</p>	<p>Product price always fixed and known for planning; Most competitive price, no business intermediaries; Reduction of deadlines, with supply chain demand directly from customer's manufacturing line.</p>

Note. Prepared by the authors

Price level comparison with competitors

A survey was carried out using websites information about competing manufacturers with regional distributors for price level practiced in the market from previous chapter identified competitors’ brands. The price comparison at Table 3 indicates, as a percentage, the net price level average (excluding taxes and local delivery charges) of competitors listed in 2020 by Nexans PABU to Brazil, considering the goods already nationalized (importing process completion) and with the sale performed by Nexans Brazil structure. The percentage in red indicates competition sales prices lower than Nexans and prices in blue indicates sales prices higher than practiced by Nexans in Brazil. Information is subjected to distributors available inventory at the time and disponible data during the survey, considering the price level practiced by the market.

Although the customer’s willingness to pay for a product is linked to the benefits and value that he sees in the product, or in the sales offer as a whole (Priem, 2007), the maintaining of a proportion to the market price level is a determining factor when the type of the product is a commodity type, what means, when the product offered features are very similar (Johnson et al., 2007). In this way, the price adjustment to an adequate competition level in the Brazilian local market is a necessary step.

Table 3. Sale price level comparison between competitors’ products and Nexans products at the local market

	<u>Cold Shrink Joints</u>	<u>Terminations</u>	<u>Separable connectors</u>	<u>Heat Shrink Joints</u>	<u>Heat Shrink Terminations</u>	<u>Mech Ferrules and lugs</u>
	CSJ	CST	Conn	HSJ	HST	F&L
Prysmian	↑+2%	↓-29%	↓-21%			
3M	↑+19%	↓-26%	↓-13%			
NKT		↓-35%	↑+22%			
TE Tyco	↑+11%	↓-43%	↑+2%	↑+73%	↑+33%	↑+50%
Niled						↓-50%
Chardon			↓-10%			

Note. Prepared by the authors

Hybrid sales strategy: The main market segments under study, despite generally seek for the same products, have strategies,

inventory volumes and sales at different timings per segment. This strategy proposal is to involve new stakeholders in addition to the traditional importer Nexans Brazil to some segments, being the new ones strategic distributors and OEM customers able to import directly from Nexans PABU Europe, and able the reach specific segment customers closer to this stakeholder, offering alternatives to shorter and urgent delivery terms, where the inventory products can be sought as a partnership option to the market needs, increasing the sales chances for Nexans PABU product in the segment.

Regional target segments: According to the presence of competitors' distributors researched in different regions in Brazil, it is possible to justify using statistical data from the CNI (National Confederation of Industry) that the largest industrial presence in quantitative terms is concentrated in the Southeast, South and Northeast of the country, reinforcing the motivation to be present at those regions.

Distributor selection, licensing, and exclusivity: The concept of strategic alliances always has an appeal for growth as it aims for a mutual gain between organizations, to reach new markets, promote a competitive advantage, and to reduce or share the operating costs, execution and their inherent risks (Elmuti & Kathawala, 2001). The process of the appropriate selection for the strategic partner is a crucial point for the success of the alliance.

Risks – Probability, Impact and Mitigating Actions

Risk assessment is a necessary premise to anticipate problems, suggest mitigation actions and measures and to reduce probabilities or avoid the impact as much as possible. As described at table 4, the colors indicated the risk and impact probability, and the next column the mitigation action.

Table 4. Mitigating actions for identified risks

	Risk	Mitigating Action
	Exchange rate fluctuation Euro/Dollar x Real	<p>Proposal of a minimum quantity as a safety inventory to limit the exchange fluctuation risk action on the already nationalized product.</p> <p>Grant cumulative discounts to customers for larger importing volumes, with a fixed pricelist in Euros for at least 1 year.</p>
	Lower price offer by competitors	<p>Present technical differentiation sheet for products comparing it as composition and different raw materials, to justify a better-quality product comparing to competitors which have a lower price.</p> <p>Offer reduced lead times for distributor partners with inventory as an offer of value on sale.</p> <p>Promote to customer technical pre-sales training for installation and technical support on the sale for specification.</p>
	Lack of products per customer specific datasheets	<p>Standardization of products by Nexans with the widest range possible, covering different specifications and applications.</p> <p>Definition of products with the highest turnover and historical consumption for inventory indication to distributors.</p> <p>Indication of different distributors with standardized products in inventory to supply emergency demands in cases of momentary lack of inventory.</p>
	Distributor absence or no engagement on customers and projects under its responsibility	<p>The distributor's presence in projects and customers in its region and portfolio makes part of the liability agreement thereof.</p> <p>Follow up the public auctions winners for projects by government websites, monitoring distributor participation on the project quotes.</p> <p>Contact the main customers and winning projects companies informing the availability of inventory and distributor responsible for quotations.</p>

Distributor financial flow difficult	<p>Difficult at payable accounts may be one of the responsible factors for inventory replacement. In this case, the mitigating action is offer to the distributor as longer payment period.</p> <p>Set replacement orders with smaller minimum quantities for the initial period of 12-month, evaluating the progress of sales.</p>
Non-Exclusive distributor, other brands sales	<p>The mitigating action is the contractual clause signed by both companies conditioning the distributor as authorized and exclusive, and anticipating loss of trademark use rights and termination of the commercial relationship in the event of breach of contract.</p> <p>Promotion by Nexans of more than one authorized distributor in the country, in different regions, to be indicated to other segments not covered by some distributor operations.</p>
Supply chain / importing issues	<p>Possibility of changing the international shipping method. In order to avoid the impact of delays and consequent fines, the incoterm can be reversed to sea or air shipping, mitigating the impact of deadlines.</p> <p>PABU products are manufactured and packed in standard boxes with dimensions standardized for air or sea shipments space or containers.</p> <p>The costs of changing the incoterm from sea shipping import to air shipping import are already informed by Nexans' as an impact cost between 5 to 10% on shipping, due to pre signed contracts with logistics operators.</p>

Source. Prepared by the authors.

Proposed solution

A proposition of a new design path for supply chain with new stakeholders and sales responsibilities intend to update PABU's business

model for the Brazilian market, inserting some direct import channel and local inventory demand to the targeted market segments, focusing a higher customer value perception, according to the customer and competitors survey performed and macro and micro environment analysis.

The Figure 4 defines a new simplified supply chain by market segment type, opening two more stakeholders importing directly from Europe PABU facilities, reducing steps, or links, on the supply chain. OEM equipment manufacturers customers with direct import can become more competitive for component prices, as there are no intermediates, and can offer their industrialized equipments containing PABU components across all segments.

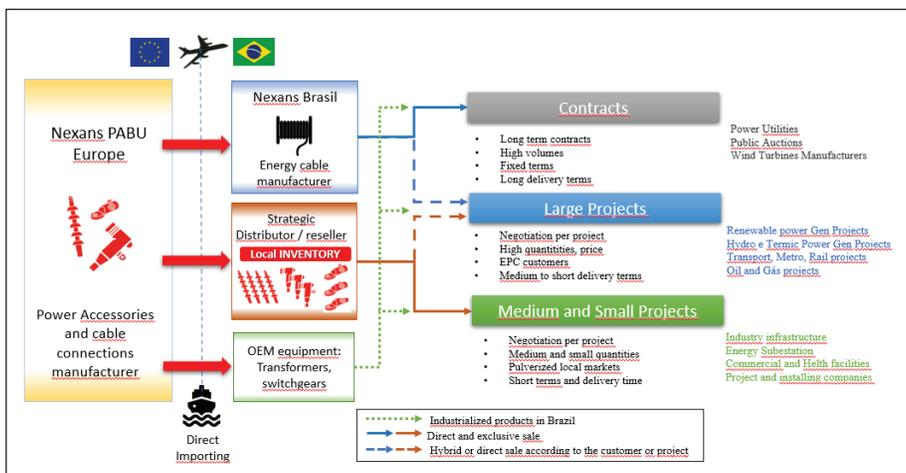


Figure 4. Proposal for a new supply and sales chain design from PABU to Brazil

Source. Prepared by the authors

The new stakeholders included in the chain can have as benefits the directly import from PABU in Europe and period fixed price list to your segment market, creating value to the reselling it in Brazil. In addition, there is a reduction in the chain link, previously done through Nexans Brasil causing double taxation and logistic costs to the distributor, increasing the possible gain to the distributor importing.

Major power generation and infrastructure projects are disclosed at ANEEL's website for auctions, therefore will be possible to delimit the responsibility of each distributor by region or by market segments to support and follow the project or winning client and possible for Nexans to monitor distributor by projects and end customers sale.

Expected results

Through the new supply chain and sales design proposal, the target is to simplify supply chain with less chain links and less complexity, being possible to customers to purchase through distributors with delivery time of less than 30 days and with smaller invoicing amounts then previous limited by Nexans Brazil. Rise up the regional capillarity with distributors will promote greater proximity and interaction with local customers, mainly industries and installers of small and medium projects, which can receive technical support for product specification, installation and sales.

As a joint action between Nexans Brasil, strategic distributor/installer and OEM manufacturers, it is intended to cover the market range of large, medium and small project segments, with the sales generation for industry market and small and medium projects, which today it is not achieved by Nexans Brasil structure and terms and represents around 25% of the national accessible market (Nexans PABU, 2019).

OEM customers currently represents around 5% of the local accessible market in Brazil (Nexans PABU, 2019) and the sales through the intermediation of Nexans Brasil for import and resale has a significant impact for costs. Considering the new design to the direct import of OEM manufacturers and distributors, is expected to grow in sales over the next 3 years and get a market share of additional 1% to 2% on the OEM segment, with the intermediate link reduction on the supply chain.

Nexans PABU's accessible market in the Brazilian market is currently estimated at 10%, and today sales are almost null. Considering the new sales promotion through the supply chain new design the industrial markets and small and medium projects should increase their offer through distributors. Local inventories open a

front for sales growth as a new segment, in addition to increase the chances for sales on the large projects segment considering the hybrid strategy between Nexans Brasil and new stakeholders offering shorter deadlines. The projection is the growing from 10% to 20% on PABU's market share in Brazil in the first three years, increasing regional capillarity, establishing strategic inventory and rising the product offers.

From the past years, sales lost to competitors due to the current business model and supply chain design were reported to sales managers of Nexans Brasil and PABU business units and are part of the diagnosis through the quoting history over the last two years. Respective feedbacks received from customers had documented the sales losses reasons. The discussion about the changes in the business model were presented to the commercial manager who considered the adjustment of the strategy and supply chain to be valid initially.

Considering the scenario, a pilot sale with distributors and key customers using the direct import design was presented and had the support of managers in understanding that Nexans PABU product sales cannot be lost to competitors, even if, in this case, the subsidiary Nexans Brasil does not participate in the sales chain, but the sale remains inside the corporation by another path or stakeholder. Some pilot sales with customers and distributors were authorized with direct import, without the participation of Nexans Brasil, according to the new proposal.

The proposal to implement distributors by region and target segment was accepted by the PABU sales manager, and a listing with a history of lost sales in the last two years was presented per customer considering projects lost to the competition due to delivery time, preparing to compose a customer local portfolio for the distributors to work on the future local inventory.

Three distributors were identified, contacted and evaluated in the last 6 months in the state of Bahia, Paraná and Minas Gerais, as potential partners. Is being evaluated the commercial capacity of sales, its current client portfolio, in addition to the documentation equal basis for a distribution contract. A first price list has already been authorized in Euros, so that distributors can assess import costs and inventories. Nexans Brasil forwarded to PABU the demand of

a large EPC renewable projects requesting a direct import channel, arguing the needs of delivery time reducing and price competitiveness. A proposal for a first direct import pilot for 2 projects of this client were approved, and the import in full directly from PABU done. The customer feedback was very positive, where competition prices were advantageous and the delivery time reduced, performing better than before.

Process evolution

Nexans Brasil's internal structure has always been responsible for the development of the business involving imported PABU accessories, therefore managed the entire import and product insertion for the Brazilian market. The analysis of investment for a local inventory was studied several times based on the intercompany model and evaluating the ABC curves for product considering higher sales history. An interlocution between the BUs seeking for a subsidized or consigned strategic inventory failed for years, unfortunately.

During the business diagnosis chapter preparation, an internal restructuring on the organization was started. Anticipating the pandemic, the corporative level intended to reduce the complexity and variety of company products, seeking to focus on more specific and profitable customers, raising minimum invoicing to low volume purchasing customers. Now, with the retraction of some market segments, projects being postponed, Nexans global corporate directive had prohibited non-strategic inventory, and finally the effect of rising exchange rates in Brazil has totally ended the discussion of imported products line inventory. It was necessary to a new vision of the opportunity.

The proposal to retreat with an internal sales strategy, reducing intercompany capacity between the business units, and horizontalizing the model for stakeholders' alliances took place for a reassessment not only of the supply chain design, but for the local governance structure considering a benchmarking of some competitors which uses this model to diversify the operations in regional segments. The option to start with a new stakeholder as an strategic alliance model and the needs for a contract to guide and reduce

opportunities and transaction costs in the chain is on the table. This proposition eliminated links in the supply chain with the inclusion of possible new regional partners, offering a disruption in this chain for smaller and more regional customers to the business.

5. CONSIDERATIONS AND CONTRIBUTIONS

Initially, the hypothesis of taking advantage of the opportunity had eyes only inside the organization. The exploratory field research and survey carried out with customers on targeted segments indicated the supply chain needs for an adjustment on the value strategy to increase competitiveness and generate sales. The analysis of the internal business model and supply chain could generate more business. However, during diagnosis, the global moment with the Covid-19 pandemic also influenced the analysis, with an impact on the internal organization and caused some changes in the proposal construction.

The retreat of the intercompany strategy and the horizontal the business model propose, underwent reassessment and benchmarking - information gathering based on reference competitors in the market, observing product, service and processes offered, and which uses the distribution model in detriment of direct sales.

Implement a supply chain change in a traditional foreign company where has never used this model locally also generated a new complexity, since it demanded the conviction of management on the two BUs with historical data, customer research and competitor information. The process also identified as competitive intelligence an ethical and legal methodology of collection and analysis of information, both from competitors and from the external environment, in order to help organizations to be more assertive in decisions (Alonço, 2016).

The new supply chain design proposal promotes an updated distribution method, characterized by two points of process innovation: (1) The introduction of new stakeholders and a unprecedented commercial path to maintain business and reach unexplored segments; (2) the proposal of eliminates links in the supply chain, opening the direct imports for more than one way, reducing complexity, increasing the product offer and generating competitiveness in costs and deadlines.

The insert of the external stakeholder agent reduces risks and costs for Nexans, but also promotes an incentive to regional development in the country with the inclusion of more people for the third parties sales teams, promoting social impacts, as it generates job opportunities, now externally in regional partners.

A certain reluctance from the top management were expected when presenting a price comparison for local competitors and some price level adjust for the local market was necessarily requested. Nexans products had never being the lowest prices in the market, and the direction of the BU is not to be. But the superior quality and technical background is highlighted to differentiate it from competitors. This is an arduous path, as the market for distributors and resellers with inventory has culturally in Brazil a direction to lower the prices.

The path taken in this study, as well as its applicability and replicability, had been started in the organization's historical sales data research, listening to the customer's feedback and their reasons for the sales losses. The proximity and the relationship between the sales area and the customer is crucial and the most relevant part to obtain useful information. The time invested in structured internal research and a customer survey has the key information for the correct use of resources and capabilities in the organization. Sales histories and customer information supports the first indication for an opportunity or for a problem.

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Recebido em: 13-9-2022

Aprovado em: 31-3-2023

Avaliado pelo sistema double blind review.

Disponível em <http://mjs.metodista.br/index.php/roc>