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# An omni-channel transformation in a Brazilian Retailer: the role of Supply Chain

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ABSTRACT

As a more comprehensive evolution of the concept of customer service channels, the omnichannel was driven by the new information and communication technologies that have the consumer to a new dynamic in the relationship with retailers. This new dynamic imposes on the retailer a series of changes in its supply chain management processes, as evidenced by the literature. The relevant authors report that new strategies of omnichannel are fundamental for retailers, making them more and more customized, either in online stores or physical stores. The aim of this article is to identify the impacts caused by the implementation of the omnichannel strategy in the planning and management processes of the supply chain of a Brazilian retail network. The research method covers a review of literature about omnichannel retail, supply chain management, and inventory management and also a case study of a Brazilian retailer that markets durable goods of several segments and adopted an omnichannel strategy. From the analysis carried out, it can be seen the positive impacts of the implementation of the omnichannel strategy: it worked as a leverage tool for the financial results improvements, and the organization was able to build a combination of its competitive advantages over other retailers compose by its network of physical stores with national coverage, its brands, and an omnichannel strategy.

PALAVRAS-CHAVE

Gestão da Cadeia de Suprimentos, Varejo, Multicanal, Transformação Digital.

RESUMO

Como uma evolução abrangente do conceito de canais de atendimento ao cliente, o multicanal foi impulsionado pelas novas tecnologias de informação e comunicação que levam o consumidor a uma nova dinâmica no relacionamento com o varejo. Essa nova dinâmica impõe ao varejista uma série de mudanças em seus processos de gestão da cadeia de suprimentos, conforme evidenciado pela literatura. Os autores relevantes relatam que novas estratégias de multicanal são fundamentais para o varejo, tornando-as cada vez mais customizadas, seja nas lojas virtuais ou físicas. O objetivo deste artigo é identificar os impactos causados pela implementação da estratégia multicanal nos processos de planejamento e gestão da cadeia de suprimentos de uma rede varejista brasileira. O método de pesquisa abrange uma revisão da literatura sobre varejo multicanal, gestão da cadeia de suprimentos e gestão de estoque e um estudo de caso de um varejista brasileiro que comercializa bens duráveis de diversos segmentos e adota uma estratégia multicanal. A partir da análise realizada, é possível perceber os impactos positivos da implantação da estratégia multicanal: funcionou como uma ferramenta de alavancagem para a melhoria dos resultados financeiros, e a organização conseguiu construir uma combinação de suas vantagens competitivas sobre os demais varejistas que compõem por sua rede de lojas físicas com abrangência nacional, suas marcas e uma estratégia multicanal.

## 1 Introduction

Brazilian retailers go through an economic period characterized by significant challenges, among which KPMG (2016) cites the emergence of a new consumer profile and the need to adapt to new technologies. EBIT (2017) notes the increased competition, including new entrants from other countries. In this scenario, it is fundamental to seek efficiency in management by analyzing the actions that retailers can implement in response to the challenging environment and its impacts on the supply chain to ensure an increasingly pleasurable shopping experience for the consumer.

Brynjolfsson, Hu & Rahman (2013) state that to remain competitive, the retailer started to invest in proximity to the consumer through strategies seeking a differentiated and customized buying experience by integrating the online sales channel known as e-commerce with its physical stores. This integration between sales channels is known as a multi-channel strategy. Another more comprehensive approach involves the sales channels and any point of contact between retailer and customer. An omni-channel strategy puts the customer at the center of the business by interacting with the retailer and the brand, supported by new technologies such as smartphones and Big Data & Analytics.

For Rigbi (2011), the omni-channel strategy is an evolution of digital retail, and it is characterized as a consumer-retailer relationship executed through numerous physical or virtual channels. This relationship is strongly supported by technology, and the channels can overlap when the consumer makes the purchase online and withdraws the product in the store. Can be identified a direct impact on this strategy on how physical stores are supplied either by the supplier or by a retailer's distribution center. Suppose the store used to receive the products in batches for sale. In that case, it now becomes necessary to also receive units for direct delivery to the customer, which forces the retailer to reorganize its internal procedures and the supplier procedures.

The crucial aspects to be studied in stock management are consumer's behavior towards the lack of products and the logistic processes that lead to this shortage. The imbalance between supply and demand is a widespread problem in any supply chain and retail, and the final link is no different. The solution to product availability is to improve inventory management in retail and throughout the supply chain. Solutions that involve increasing inventories to mitigate inefficiencies go far beyond the solution once they create another problem represented by the business's working capital. In this sense, a holistic approach is necessary to consider the whole supply chain, its processes, and its integration. With this approach, it will be possible to identify the root causes of poor management of items such as people, inventory, cash flow, business partners, and information systems.

Based on these considerations, this research aims to identify the impacts caused by the implementation of the omni-channel strategy in the planning and management processes of the supply chain of a Brazilian retail network.

This research covers a gap in studies on omnichannel in Brazilian retail, an important sector of the economy. Being aware of the impacts generated by the implementation of the omnichannel strategy, specifically in Brazilian companies, the retailer can prepare adequately, aiming at the success of the performance, today necessary for the growth or even subsistence of retail.

## 2 Theoretical Framework

### 2.1. The Omni-Channel Retail

The Omni-Channel concept, a strategy that seeks greater proximity to a segment of consumers increasingly connected to the virtual world, and significant growth strongly affect retail as the last link in the supply chain. Verhoef, Kannan & Inman (2015) highlight two essential characteristics of the omni-channel strategy, the synergistic relationship of the contact points and the need to offer the consumer the same experience independent of the point of contact.

The omni-channel is the result of a process of evolution of customer service channels. According to Zhang et al. (2010), this explosion of online retail was motivated by the fact that the internet made it easier for the retailer to expand the offer of products to the consumer in a much faster way.

Explore a multi-channel operation offers the opportunity to collect much more consumer information. Knowing consumers' consumption habits allows the retailer to develop more customized and profitable offers, either in online or physical stores.

The impact of the introduction of the omni-channel is not limited to deliveries but also occurs at the retailer's distribution center that adapts to the new separation, transportation, and delivery model.

According to Tetteh & Xu (2014), the retail-consumer relationship that was once limited to the world of physical stores today is fully integrated into the digital world as well. The great challenge is to make this relationship consistent throughout all client-retailer-supplier interactions, the omni-channel proposal. Gallinno & Moreno (2014) demonstrate, for example, the importance of integrating online and physical stores as an essential element in improving the consumer buying experience.

Bell, Gallino & Moreno (2013) point out that physical stores play a relevant role in the omni-channel environment since specific categories of consumers are more sensitive to the product experience. This experience has the power to reduce the possibility of returns by the consumer, thus reducing the cost of the logistics operation.

Emrich, Paul & Rudolph (2015) explore the effects of assortment allocation by online channels and physical stores on consumer behavior on their shopping journey. The retailer can offer a much wider range of consumer products, which benefits the consumer in various supply and convenience aspects. In the omni-channel concept, the retailer can choose to eliminate any barrier to accessing the entire assortment of products offered.

EY (2015) warns that the implementation of the omni-channel strategy is not an initiative that increases profit or retail contribution margins immediately. The increase in billing may occur, but initially, it may affect the profit margin impacted by the demands of implementing this strategy, such as channel integration. The study cites that the retail supply chain was developed to supply physical stores and needs to adapt to meet the online consumer.

## 2.2 Delivering Value to Consumer

Kotler & Keller (2012) argue that it is not enough to manufacture and sell the product or service in competitive markets. It is necessary to "deliver value" to the customer, and this delivery happens by executing a sequence of coordinated interdepartmental activities.

One of the main reasons for the loss of value is the unavailability or lack of product (rupture). One of the most efficient companies in making the product available to the customer is Walmart, the largest retail chain in the world. The availability is possible because Walmart has an extensive collaborative network of information sharing with its main suppliers. Thus, when a product leaves the store, its replacement process is started in the supplier itself (Kotler & Keller, 2012).

Parente & Barki (2014) affirm that the variety of products and low level of ruptures increase the perception of value for the consumer. The prompt delivery and availability of the product for experimentation are the significant differentials that a physical store presents concerning the online channel.

Kumar & Reinartz (2016) argue that organizations exist to generate value for customers. Then the client, realizing the value offered, generate value for the organization in the profit format. For the final customer to perceive value, the retailer must guarantee a buying journey permeated by uniform experiences at all the relationship points. And part of this action has to translate into the delivery of the product or service to the consumer.

The impact of omni-channel on delivering consumer value and returning to the retailer is demonstrated in Deloitte (2014). According to the survey, consumers are looking forward to a shopping journey through multiple sales/service channels. They are willing to reward retailers for either buying higher-value items or brand recognition and loyalty.

The omni-channel generates value for the consumer by providing flexibility in their shopping journey through various contact points (website, mobile device, physical store). On the other hand, the consumer repays this value offer provided by the omni-channel retailer through a more significant purchase volume. The consumers would not purchase if there were no such flexibility.

Concerning the delivery of value to the consumer provided by the implementation of the omni-channel, it is also possible to add the role played by the sales team. Yurova et al. (2017) argue that the retailer should prepare the sales team to serve the omni-channel consumer. This consumer values the shopping experience, especially for hedonic products, such as high-tech electronics. Thus, a well-prepared sales team can add value to the consumer by providing relevant information about the product.

### 2.3 Supply Chain Management

Chopra and Meindl (2016) caution that the coordination of relationships in the supply chain only occurs if each chain link considers the impact of its actions on the previous and subsequent links. Although the relationship is simple to understand, there are difficulties in its implementation. Each element has its business objectives and goals. While there may be a common goal of serving the end customer, this is most perceived only in the last links in the chain.

In addition, organizational managers do not necessarily agree with each other, and coordination and collaboration between the chain links only exist through an intense exchange of information based on mutual trust.

Gibson, Defee & Ishfaq (2016) highlight the impacts of the growth of online retail and highlight the strategic priorities of the retail supply chain for the coming years and the individual actions that are being put into practice (Table 1).

*Table 1-Priorities in retail supply chain management and respective strategies*

| Priority | Strategies |
|---|---|
| **Increase the efficiency for the omni-channel consumer** | Encourage the use of physical stores as a point of collection; Increase the use of "Big Data & Analytics" tools for trade-off decisions (price, delivery speed, etc.) |
| **Use Supply Chain Competencies for Revenue Generation** | Reduce lead time, increase availability, offer more convenient options, improve customer experience. |
| **Stock Allocation** | Reduce inventory area in stores with intensive use of IT tools to improve the replacement process. |
| **Change Management** | Recognition of the importance of human capital through investment in training and development, empowering teams to assist the new omni-channel consumer. |

Source: Adapted from Gibson, Defee & Ishfaq (2016)

### 2.4 Inventory Management

Arnold (2008) cites that any company that wants to maximize its profits has to have a minimum inventory investment. This point is even more relevant in retail chains that do not usually control production despite having significant bargaining power and product positioning.

The availability of the product in the industry is related to the concept of service level provided to the retailer. After all, product availability in the industry influences the availability of products that the retailer will offer. Reinforcing the relevance of the issue, Parente and Barki (2014) argue that inventories absorb a large volume of financial resources and therefore deserve special management by the retailer.

The implementation of inventory management may require a broad transformation in the organization, demanding the elimination of departmental silos. Corrêa, Gianesi & Caon (2013) affirm that implementing robust management systems such as ERP (Enterprise Resources Management) aims to eliminate the lack of informational coordination between the areas, facilitating integration.

#### 2.4.1 Inventory Management and the Omni-Channel

It is important to note that with the emergence of the omni-channel concept, the boundaries between the sales channels do not exist from the consumer's perspective.

The same reasoning is valid to inventories. Although they may be physically allocated in a sales channel (a physical store, for example), they will not necessarily be dedicated to exclusively serving this store's demand.

Gallino & Moreno (2014) point out that retailers that have a high degree of integration between online and offline channels (physical stores) can offer the consumer the possibility to make the purchase online and withdraw the product in the physical store, known as BOPS (Buy Online and Pickup at Store). This characteristic of the omni-channel concept creates a new challenge for the retailer and, consequently, the supply chain.

Under this concept, the stock becomes shared between the channels in a more dynamic way and from the consumer's perspective. Gallino & Moreno (2014) also warn of the impacts of channel integration and their inventories. This sharing increases the flow of consumers in physical stores, leading to increased sales and, consequently, the need to revise the criteria that define store inventories.

Gallino, Moreno & Stamatopoulos (2016) address the issue of dispersion of sales from the integration of sales channels and warn that this characteristic of the omni-channel retailer needs to be considered in inventory management processes.

The phenomenon of channel integration can improve the consumer buying experience, making it more enjoyable as new service possibilities are introduced, eliminating points of friction in the consumer-retailer-brand relationship.

Guy (2015) and EY ( 2015) draw attention to the challenges that channel integration demands for inventory management in the omnichannel environment. The consumer wants to buy and receive products, regardless of the purchase channel used. This, from the retailer's perspective, is very complex because the history of demands supports his stock allocation. The new consumer does not see this way, demanding changes by the retailer to serve him.

*Table 2-Inventory Utilization: Traditional Model and Omni-Channel Model*

| Physical Inventory Allocation | Traditional Model | Omni-Channel Model |
|---|---|---|
| **Physical Store** | The stock has to meet the store demand. | The stock has to meet the consumer's demand who purchased the product from the retailer, independent of the sales channel. He also has to meet the demand for replacement and sales in physical stores. |
| **Distribution Center** | The stock is destined to meet the demand for replacement and sale of the physical stores. It is also used to meet the demand of the online store. | |
| **Supplier** | The stock is intended to meet the retailer's demand, and it is delivered to the Retailer's Distribution Center or a physical store. | |

Source: Author based on Gallino & Moreno (2014); EY (2015); Gallino, Moreno & Stamatopoulos (2016)

When considering the omni-channel model in the allocation and use of inventories, the retailer seeks to provide the customer with a better level of service (reduced lead time, increased availability). According to Verhoef, Kannan & Inman (2015), the retailer must analyze the variables involved and make the best decision about the product's origin and the delivered form to the consumer.

The consumer will benefit because it can receive the product faster, regardless of location, mainly in an online store. From the point of view of the retailer, the benefits will also exist. Freight and handling costs are also likely to be reduced. Ishfaq & Raja (2017) cite that moving stock in a physical store would be better used, serving consumers of the online channel and reducing operating expenses. In this scenario, EY (2015) alerts to the increasing complexity of supply chain management and, consequently, inventory management.

### 2.4.2 Inventory Management and Sales Forecast

Another element that adds complexity to inventory management in industry and retail is the sales forecast. Khun and Sternbeck (2012) report that the more accurate the sales forecast, the lower the need to maintain security stocks along with a retail distribution network (Distribution Centers, Physical Stores). Parente & Barki (2014) argue that retail sales forecasts are vital in the definition of volumes purchased from suppliers and resold to consumers.

Maab, Spruit & Wall (2014) conclude that statistical methods combined with analysis based on the experience of professionals involved in the demand management process can generate significant improvements in sales forecasting accuracy. This accuracy will provide substantial gains in the definition of adequate inventory levels and maintenance of the level of customer service since the quantity in stock is influenced by the level of demand accuracy (ARNOLD, 2008).

### 2.4.3 Inventory Management and Stockout

Turk (2011) points out that retailers should work together with their suppliers to seek continuous improvement of their value chain processes as the breach or stockout jeopardizes customer loyalty to the store and the supplier and the costs inherent in the loss of the sale.

Stockout is a persistent problem for retailers. Even with the advancement of new technologies and the implementation of collaborative processes, the issue remains a point of attention for any retailer (EHRENTHAL & STOZLE, 2012). On the other hand, consumer reactions to the lack of the desired product are numerous but have in common the damage to all links in the chain. This situation reinforces the need for an integrated chain-wide approach, mainly manufacturer and retailer, to mitigate or reduce the effects of product shortages (TURK, 2011).

### 2.5 Omni-Channel: Impacts

Hübner, Wollenburg & Holzapfel (2016) address the operational impacts on the following processes in the value chain of a retail company operating under a multi-channel approach to adopt the omni-channel strategy: Inventory Management; Handling of Products on the DC (Picking); Assortment Management; Delivery Management to the Consumer (Delivery Time and Model); Reverse Logistics (Returns); Management of the Organizational Structure (Organization Chart) and Management of Information Systems.

Regarding the unification of inventories, the authors acknowledge that, although the complexity of the operation, especially in the distribution centers, increases, the gains in terms of agility in meeting consumer orders overlap. Inventory integration, also supported by integrated information systems, is considered a prerequisite for implementing the omni-channel strategy. The authors emphasize that this inventory integration provides a synergistic integration of the channels regardless of channels or location.

It is worth emphasizing that the impacts of implementation can spread through other areas. Carvalho & Campomar (2014) note that the processes of consumer relationship management, usually associated with Marketing, need to be adapted to the new approach. It is up to Marketing to deepen their understanding of consumer buying behavior to create, for example, more individualized and customized experiences that can bring more results to the business.

Another area cited by Carvalho & Campomar (2014) is Human Resources Management. During the shopping journey, the consumer also interacts with employees, and they need to be prepared to deal with the omni-channel consumer. Not only the salespersons at the stores but the whole organization.

Kraemer (2015) lists actions to implement the omni-channel:

• Obtain integrated visibility of all inventories, i.e., Warehouses / DCs, Physical Stores, transit, and supplier;

• Develop a flexible distribution network with the logistics partners (suppliers, transporters, logistics operators) in line with omni-channel demand dynamics (allocation of spaces and services in a flexible way to meet the demand for shipments to stores and consumers);

• Consider innovative models for consumer delivery (Last Mile). Consider that the experience and the purchase journey also comprise the delivery stage.

• Maintain attention to the need to integrate the new Information and Communication Technology tools with legacy systems. There is a risk that they will become blockers to the omni-channel implementation since they have been developed from the perspective of a traditional retail supply chain.

To measure the performance of a hybrid supply chain, a chain that integrates the operations of online stores and physical stores, Kumar, Tiffany & Vaidya (2016) suggest adopting the set of defined SCOR (Supply Chain Operations Reference) performance indicators model.

From this survey, the authors sought to relate the initiatives that characterize the implementation of the omni-channel environment and the respective impacts in the operation and related areas. They have focused on order fulfillment and product delivery to the final consumer to elaborate on this relationship.

From the theoretical framework, the impacts of implementing the omni-channel strategy involve operational characteristics such as increased complexity in inventory management and others, like cultural changes.

The need to implement new functionalities in legacy information systems or acquire new systems in the addiction of the increased complexity in the storage and distribution processes due to greater fractionation of loads also impacts the omni-channel implementation.

An omni-channel organization demands more integration and collaboration between areas that previously acted in a segregated way by sales channel.

In terms of collaboration, it is vital to

*Table 3 – Omni-Channel initiatives and impacts*

| OMNI-CHANNEL INITIATIVE | WHAT IS? | IMPACTS |
|---|---|---|
| *Same price for all sales channels* | Adopt the same or similar prices in physical stores and online store. | Need to implement systems that consider all business variables (taxes, competitors, margins) to determine the correct price;<br>Review processes and organization for definition of price policy independent of the sales channel |
| *CC: Click & Collect /BOPS* | The consumer buy online and pickup at the store. | Increase in the uncertainty of the demand in the store and consequent difficulty in determining the store's ideal stock / ideal assortment;<br>Increase of the picking operation in the Distribution Center (DC);<br>Adequacy of the physical and organizational structure of the physical store;<br>Reduction of Delivery Freight Cost;<br>Increased customer flow in the store and possible conversion increase;<br>Best consumer buying journey due to lead time reduction. |
| *CR: Click & Reserve online/pickup at the store* | Consumer has access to the stock available in the Physical Store or even in the distribution center and can make a reservation of the product for later billing and withdrawal in the physical store. | The need to implement procedures and systems that make it possible to make visibility of stocks of physical stores and DCs through the website;<br>Increases the complexity of inventory management available in the physical store and on the DC;<br>Reduction of Delivery Freight Cost;<br>Increased customer flow in the store and possible conversion increase;<br>Best consumer buying journey due to lead time reduction. |
| Physical Store acting as a small Distribution Center | Physical store billing and shipping to the consumer independent of the sales channel used to purchase the product. In addition, the physical store also operates supplying other stores, replacing the Distribution Center. | Increase in the uncertainty of the demand in the store and consequent difficulty in determining the store's ideal stock / ideal assortment;<br>Adequacy of the physical and organizational structure of the physical store;<br>Streamlines and optimizes inventory turnover through transfers to other stores and / or consumer sales<br>Possible reduction of Delivery Freight cost due to the proximity of the stock of demand points (delivery place);<br>Increased transport and inventory management complexity due to increased inventory dispersion. |
| Logistics operations integration at the DC (mainly stock) | The Distribution Center ceases to be segregated by sales channel and starts to serve all operations independent of the sales channel | Increase in the complexity of the operation that starts to meet shipments of different characteristics: fractional load (Orders of Online Shop) and Consolidated (Orders to Supply the Physical Store).<br>Optimization of inventories that are no longer segregated by sales channel and begin to meet the consolidated demand (Physical Store and Online Store);<br>Stockout reduction due to inventories optimization. |
| Provide Innovative Delivery Options for the Consumer (last mile) | Provide the consumer with options other than the usual delivery, such as: lockers, points of flow of people such as post offices, gas stations and shopping centers. | Requires the need to hire a specialized third party service as lockers suppliers and establish partnerships with companies (gas stations, post offices, malls);<br>Institutional gains (the retailer's image and the customer's best shopping journey through convenience. |

To be continued

*Table 3 – Omni-Channel initiatives and impacts (continued)*

| OMNI-CHANNEL INITIATIVE | WHAT IS? | IMPACTS |
|---|---|---|
| Returns and changes in Physical Stores (reverse logistics) | Allow the consumer to use the structure of physical stores to make an exchange or return of the product purchased independent of the sales channel used | Adequacy of the physical and organizational structure of the physical store to receive consumer products;<br>Speed inventory replenishment if returned product can be resold;<br>Best consumer shopping journey due to the convenience offered. |
| Implement Full Inventory Visibility to Customer (Cross Channel Inventory Optimization) | Allow the sales team and also consumers to have full visibility of the inventories in the company (Stores, DCs and possibly suppliers) | Need to implement systems and management processes (Order Management System) in parallel to the maintenance of legacy systems;<br>Need to implement technology and support processes to improve inventory controls in physical stores such as using radio frequency tags;<br>Optimizes the use of inventory according to predefined business rules: better customer service and sustainable sales margins. |
| Implement the Omni-Channel organization | Delete organizational structures segregated by sales channel | Need to revise / adapt organizational structure. From: Organizational Structure by Channel, To: Consumer-Oriented Organizational Structure;<br>Elimination of organizational silos through the implementation of a consumer-oriented structure, generating more communication and collaboration and also eliminating overlapping functions. |
| Withdrawal of the Product by the consumer in the DC (PickUp in DC) | Retailer offers the consumer the possibility of withdrawing the product in the Distribution Center speeding the delivery. | The need to review / adapt the organizational and physical structure of the DC to allow withdrawal of the product by the consumer;<br>Best consumer buying journey due to reduced lead time and increased convenience. |
| Ship products directly to the consumer from the Supplier, without having to go through the retailer's installation (Ship Direct to Customer) | Implement shipments direct from supplier to consumer. | The need to implement partnerships and their organizational / operational structure to allow shipments from the supplier to the consumer;<br>Necessary high degree of partnership with the supplier involving information of availability and visibility of the inventory;<br>Reduction of storage and handling costs in the operation of the retailer;<br>Best consumer buying journey due to lead time reduction. |

Source: DHL (2015); Carvalho e Camponar (2014); Hubner, Wollenburg e Holzapfel (2016); Witcher et al. (2015); IBM (2016); EY (2015), Vogel e Paul (2015) highlight the need to implement partnerships with other supply chain links as service providers such as haulers and even fuel stations to act as a pickup point to consumers. Positive impacts are also related, for example, from the financial point of view, the reduction of the freight cost of deliveries to the consumer, reduction of stockout rates due to inventory integration or optimization, and increase of the flow of consumers in physical stores.

Table 3 sumarizes the impacts of the implementation of the omni-channel strategy from the theoretical framework researched.

## 3 Methodology

The theoretical evidence of this research is based on information collected in periodical scientific publications, books, and theses published mainly from 2010 and searched in the databases Google Academic, Web of Sciences, and SciELO. The research also included reports regarding retail operations published by management consulting firms such as KPMG, EY, Deloitte and extensive logistics operators such as DHL.

The literature analysis on the subject sought to identify the impacts of the retail supply chain from implementing multi-channel strategies that improve the customer's buying experience. In addition, it highlights the actions of the retailers to maximize the effects of this strategy on consumer loyalty.

From the literature analysis, some theoretical propositions were validated by empirical evidence collected through interviews, documentary analysis (public documents), and observations of the researcher in the field (stores, distribution center). The strategy of validating theoretical propositions is Yin's (2015) suggestion for a case study. Richardson et al. (2008) corroborate this strategy by stating that the data collection stage of the case study seeks to reinforce or even question the explored theory.

The case study carried out in a national retail chain aimed to analyze the actions taken in adapting its supply chain to integrating the logistics operations required by the omni-channel strategy.

Eisenhardt (1989) emphasizes that the case study seeks to understand the dynamics of a specific environment. The exploratory nature of the research considers that the omni-channel theme is relatively recent, mainly in Brazil. Still, it has been rapidly evolving due to the phenomenon of digital transformation that almost naturally reinforced the launch of new channels of relationship with the consumer.

The target company of the study, referred to as RETAILER, began its operation in 1950 and expanded nationally either through acquisitions of smaller retail chains or organically through the opening of new stores.

It is essential to affirm that RETAILER has added to its assets a set of brands (store flags) that can be considered a competitive advantage in this acquisition process. As a result of this expansion, an extensive logistics network was created, consisting of more than 1000 points, between stores and distribution centers. Its gross revenue is approximately R$ 30 Billion reais per year. In 2016 the company announced the decision to integrate its operations of physical stores and online stores and their inventories into a single company.

Among the expected synergies with integration, the company was worth highlighting: improving the consumer buying experience; search for competitive advantages in line with the new retail scenario; reduction of logistics costs; and using existing assets (physical stores) to leverage the operation of the online store.

The new strategies brought some impacts to commercial and logistics areas. To get evidence regarding these impacts, the researcher promoted semi-structured interviews with the heads of the areas, leading to the implementation of new strategies: Logistics and Infra-structure Director and Commercial Planning Director.

After the interviews, the two directors recommended visiting some physical stores and the main distribution center. In both cases, the researcher has been escorted by the Store Managers and Distribution Center Manager. Based on Yin (2010), the author sought to elaborate a script of questions associated with the research proposal to arise the impacts in planning and managing the retail supply chain. In this way, the questions draw attention to consequences, and possible solutions applied. After the interviews, the research executed the analysis and discussion of the theoretical and empirical evidence obtained, which were carried out considering each of the propositions established from the theoretical foundation.

## 4 Case Study

### 4.1 Data and Evidence Collected

The implementation of the omni-channel strategy has impacted the company's planning and management processes. To understand these impacts, the researchers get data from three evidence sources: interviews with the directors of the areas of Logistics and Commercial Planning and Pricing, document analysis, and observation.

The Logistics and Commercial Planning, and Pricing areas played a crucial role in the omni-channel implementation, so much important information was obtained. The two interviews were semi-structured and happened in person. It takes about two hours each. The questions were directed to strategics and operational impacts with omni-channel implementation.

In addition, the researchers consulted public documents on the financial and operational performance of RETAILER. As a publicly-held company, classified at a certain level of Corporate Governance at B³ (São Paulo Stock Exchange & BMF) under the supervision of CVM-Comissão de Valores Mobiliários, the organization provides operational and financial performance reports in a standard internationally accepted. The researchers also follow the teleconferences presented by the executive board for the investors. These are made after the interviews to validate the collected data in that stage.

Finally, the researchers made guided visits to the main Distribution Center and some stores. In this way, it was possible to obtain a perception of the impacts and respective actions taken to guarantee the success of the implementation. For collected this data, the researchers stayed at each place for three periods recording the activities and perception of the employees.

For the contents analysis, the researchers using the software Iramutec categorizes the texts' main issues.

The analysis of the collected evidence sought to validate the following propositions; these get by literature review:

1. Customers are pushing retailers to adopt the omni-channel strategy.

2. The adoption of the omni-channel strategy requires adaptations in the supply chain.

3. Advances in Information and Communication Technology (ICT) will work together to increase the supply chain's efficiency.

4. Omni-channel enhances retail competitiveness in an environment with more competition and changes in the consumer profile.

5. The omni-channel strategy requires integrated management of inventories and prices (online/offline).

### 4.2 Theoretical Propositions and Evidence

The analysis and discussion of the theoretical and empirical evidence obtained were carried out considering each one of the propositions established from the theoretical foundation:

#### 4.2.1 P1: Clients are Pressuring Retailers to Adopt the Omni-Channel Strategy

Piotrowicz & Cuthbertson (2014) argue that the new generations demand technological resources that allow digital interaction with retailers. In this context, the proliferation of new technologies is cited as the driving force behind the omni-channel strategy. KPMG (2016) reinforces the role of "digital natives" or millennials by noting that retailers' investments in omni-channel platforms are among the primary initiatives to reach this segment of consumers. Cook (2014) points out that the buying experience of this consumer can be frustrating when on a shopping trip the same is faced with different prices for the same product in different sales channels. Piotrowicz & Cuthbertson (2014) still warn of generalizations about consumer behavior by pointing out that other criteria such as brand experience or product type (low-cost products, high-end products) are also associated with how consumers wish to interact with the retailer.

It was possible to observe that the area responsible for defining and executing the organization's pricing policy assumed a fundamental role. This area results from the unification of two areas that previously defined the prices of products for each channel independently. Called "Commercial Planning and Pricing," this area defined a pricing model to meet a pricing policy that provided the same or similar price situation for products independent of the channels. One factor that is taken into account is the price practiced only by strategic competitors. The price charged is not associated with the cost of operating the sales channel but rather with a view of the entire operation. There may be price differences between channels, but these are not significant to how they impact consumers' buying experience. In addition, it was possible to verify that the sales teams of physical stores, when confronted by a potential price difference between online and physical stores, are ready to negotiate the lowest price to meet consumer expectations.

When browsing the channels (online and offline), the consumer is waiting for a unique experience. In the RETAILER company, the BOPS (buy online pickup at the store) indices showed constant growth throughout the year 2017, reaching 27% of all orders in Telephony, TV, Long Tail Technology, and Portable Long Tail from the online store. The analysis of the evolution of the withdrawal rate of the product in-store demonstrates that RETAILER responded to consumer demand. The number of products made available for this modality increased by 271% in 2017. And considering these products, the percentage that was withdrawn using store stock reached 57%. These advances represent advantages in terms of reducing the value of freight for both retailers and consumers. In addition, it means more convenience for the consumer because of the rapid availability of the product.

It can be said that this type of operation meets a consumer demand that does not see the channels as separate entities, even if the channels (online and offline) operate under the same brand. In this scenario, the Logistics area was responsible for sending products to the physical store destined for direct delivery to the online store's consumer.

In addition, it was possible to observe, through the follow-up of the conference calls for investors, the concern of the Executive Board with the service provided to the consumer. This statement is based on data about investments in information technology and logistics in the last quarter of 2017. The results were an excellent performance in the logistics area, which reflected more quality in the service provided to consumers, such as the speedup of deliveries and availability of products.

It was possible to conclude that actions implemented by the RETAILER meet the demands of the new consumer, which in turn demands a fluid, simple and uncomplicated experience during the buying journey

#### 4.2.2 P2: The Adoption of the Omni-channel Strategy Requires Adaptations in the Supply Chain

Gibson, Defee & Ishfaq (2016) highlight actions for the supply chain to meet the demands of the omni-channel strategy. Among them, one can draw attention to inventory allocation that is no longer associated with the sales channel. In addition, with the increased consumer product delivery options that omni-channel provides, the supply chain needs to undergo a redesign. With the omni-channel, the consumer seeks convenience and wants to withdraw the product at physical stores or even receive the product at a pickup point such as a gas station. The supply chain can become a competitive edge by offering consumers convenience and a superior shopping experience.

Ishfaq & Raja (2017) warn of the necessary adaptations in the organization of physical stores when the retailer decides to use these stores as a point of withdrawal of products purchased in the online store (BOPS). Gibson, Defee & Ishfaq (2016) also cite the necessary adaptations to offer the consumer the possibility of using the sales/delivery channels as points of return for products. It requires an agile reverse logistics process to return the returned product for sale. Finally, retailers need to review their methods of forecasting sales and inventory allocation. After all, in an omni-channel environment are considered several options to meet the demand of integrated channels (online and offline).

In the company that was the object of the case study, an important organizational adaptation impacted the management of prices. The company had a differentiated price strategy for each channel, which, from a view of independent entities, considered that the sales generated in the physical store had to "pay" the store's costs as inventory maintenance costs, rent, sales staff, security, among others. This approach justified higher consumer prices than the online store that does not carry these costs. By unifying its operations online and offline, the pricing strategy became its strategy rather than the channel. In this sense, the area of Commercial Planning and Pricing was unified to serve the customer-focused business that does not differentiate service channels.

It is important to emphasize that the area of Commercial Planning and Pricing also needed to adapt to meet the demands of the Logistics area. Logistics leads the process of S & OP - Sales and Operations Planning responsible, among other things, for defining the allocation of stocks to maintain supply aligned with the commercial strategy. To meet this alignment, the Commercial Planning and Pricing area had to analyze the commercial strategy of the channels considering that actions in the physical store impact consumer behavior in the online store and vice versa.

The Commercial Planning and Pricing area is also responsible for managing the relationship with suppliers of products for resale. This relationship did not undergo significant changes due to the omni-channel implementation. It is because purchases were already made on a consolidated basis. But both were defined separately. There was a need to purchase for the physical stores and another need purchase for the online store. Since the definition of volumes was separate, it was common for additional stock to be purchased. A possible excess inventory of a product in the physical stores was not considered in the definition of the volume of purchases for the online store. With the unification of inventories, purchases were optimized, and supplier relationship management processes became more robust, including maintaining the vendor's business strategies with RETAILER's business strategies. Previously this alignment was done separately for each sales channel regardless of the impact of the vendor's commercial actions that permeated the sales channels.

Finally, as a reflection of the omni-channel strategy, it is essential to mention the positioning of the Commercial Planning and Pricing area in the adoption of the e-marketplace concept. In this sense, there is no conflict when a business partner, known as a seller, offers a product on the online platform with a more advantageous price than the RETAILER. The benefit to the consumer prevails as a norm, and it is up to RETAILER to develop actions to compete with the business partner, not just the price factor.

For the Logistics area, responsible not only for the allocation and handling of inventories but mainly for the policies that govern the management of these inventories, the implementation of the omni-channel strategy brought the need for several adaptations. As responsible for the leadership of the S & OP process, logistics has the function of acting as an integrator of the several areas that contribute to the success of the process. Aspects such as leadership capacity and mobilization of the other areas for a common goal were determinants to reducing stockout rates.

It is essential to highlight the effort required to implement the BOPS modality. The withdrawal of the product using the stock of the store itself or using stock transferred from the Distribution Center (DC) requires an alignment of several processes with different areas. For example, the definition or revision of the product mix or portfolio offered by the physical store depends on the alignment of the areas of Logistics with the areas of Marketing and Commercial Planning and Pricing. The challenge also involves a significant shift towards the inter-unit transfer of products. In traditional logistics, the physical store was supplied with large volumes in consolidated packages. In the new model, the operation had to adapt to send products in unitary / fractionated packages to the consumer without going through unpacking in the physical store. The more consolidated cargo profile began to have a greater variety of products in different types of packages.

Another change in progress is implementing the project of turning a physical store into a mini distribution center. In this context, the number of nodes in the distribution network and the storage locations increases, increasing the complexity of inventory allocation management. In the view of the consumer, the advantages of this operation are evident. With the stocks closer to the demand points, the consumer gains agility in delivery and reduces freight cost.

It can be affirmed that the actions in progress or those already implemented by RETAILER agree with the proposition that the implementation of the omni-channel strategy requires that elements of the supply chain adapt to meet the demands of the omni-channel strategy. They review their processes, organization, and technological support to adjust the supply chain to the omni-channel model.

#### 4.2.3 P3: Advances in Information and Communication Technology (ICT) Enhance Supply Chain Efficiency.

Bradlow et al. (2017) & Zhang et al. (2010) evaluate Information and Communication Technology (ICT) as an enabler of the multi-channel operations strategy and stress that this strategy allows the collection of more data regarding the consumer when there is interaction with the retailer. From the analysis of these data, it is possible to adopt specific actions to, for example, execute promotional actions aligned to the profile of the consumer purchase.

Witcher, Wider & Sheldon (2015) and Kraemer (2015) point out that order fulfillment methods in the omni-channel environment demand robust management systems (OMS-order management system) and storage management (WMS-warehouse management system). These information technology systems are considered as enabling an omni-channel operation because they provide, among other functionalities, integrated inventory visibility and control of the operations in the distribution center.

In the case study carried out and the OMS and WMS systems, the Commercial Planning and Pricing area invested in IT tools to meet the demand for a unified pricing strategy known as "Price Match." The company searched the market for specific software to manage the pricing strategy. This software had to comply with all business rules considering the numerous variables defined by RETAILER to guarantee a unified and profitable pricing strategy for the business.

Concerning the opportunities made possible by IT, it is also worth noting increased sales conversion in the physical store when using data collected from the consumer during their shopping journey in the online store. For example, we can mention the opportunities of cross-selling or up-selling generated from the analysis of the data collected during the purchase journey and historical data. In other words, a consumer who purchased a cell phone from the online store while taking the product from the physical store may be encouraged by the store's sales team to purchase, for example, theft insurance. This way, the retailer can get better contribution margins for the business from selling the two items, cell phone plus theft insurance.

In the case study, the Commercial Planning and Pricing area recognize that its performance in the execution of the processes is strongly based on the technology tools. They highlight the integration aspect of the databases of the consumer relationship systems (CRM-Customer Relationship Management) and business management (ERP-Enterprise Resource Management) through BI-Business Intelligence systems. By providing better inventory visibility across the Distribution Centers and Physical Stores network, information systems such as ERP enable store replenishment processes and inventory allocation to be much more assertive. Such move decisions combined with anticipated and managed demands in the S & OP-Sales and Operations planning process, under the leadership of the Logistics area, increase the efficiency of a high-value asset of RETAILER: the stock. From the Logistics point of view, this asset started to be a single inventory instead of the channel-separated inventory model. And this was reflected in systems, notably ERP. The S & OP process was automated with the acquisition of a specific tool since the RETAILER understood that the volume of data to be worked required a great effort of the logistics team. These actions have allowed the management of movements and inventory allocations along the logistics network to always be in line with expected demand, reducing the risk of shortages or excesses.

It is important to consider that a supply chain needs to be managed end-to-end. In the case study, it was also possible to highlight the effective use of technologies such as geolocation in the monitoring of product delivery routes, whether in the supply of a physical store or a delivery to the consumer.

#### 4.2.4 P4: The Omni-Channel Strategy Enhances Retailer Competitiveness

Zhang et al. (2010) & Verhoef et al. (2015) state that the adoption of the omni-channel strategy meets the needs of the current consumer characterized by the desire to relate to the retailer uniquely independent of the sales channel. Piotrowicz and Cuthbertson (2014) cite that this ability to offer such a unique consumer experience is critical to the retailer's competitiveness.

Brynjolfsson, Hu, and Rahman (2013) argue that as barriers between the physical world and the virtual world are disappearing, retailers need to revise their strategies to stay competitive. The same authors say that strengthening partnerships between retailers and suppliers can create more competitive advantages for the retail supply chain. Finally, Albright & Nuce (2014) cite a retailer's ability to synergetically combine their physical store network with their online channel as a factor that creates a competitive advantage against retailers who do not use the omni-channel strategy.

In the study organization, the financial performance data released to the market in February / 2018 demonstrate the importance of adopting the omni-channel strategy. The company integrated its physical store operation with its online operating arm in the last quarter of 2016, and the fruits of this integration appear clearly in the income statements of 2017. In presenting the results to the market, the management of RETAILER emphasized the achievements of the integration of channels highlighting improvement in the level of consumer service, more assertive pricing policy, and closer relationship with suppliers, among others.

According to FECOMÉRCIO-SP (2018), the retail segment took advantage of a resumption of consumption during 2017. In March 2018, FECOMERCIO-SP published a survey showing that the Household Consumption Intention Index increased by the 19th consecutive month. In this scenario, RETAILER was able to revert a loss of R $ 1 Billion, adjusted to meet accounting standards, the corporate reorganization, in 2016 to a net profit of R $ 195 Million in 2017. Other indicators such as EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization) and net revenue presented the same positive performance. Net revenue increased by 11% and EBITDA margin increased by approximately 2.6 pp.

The sum of a good business environment, according to economic recovery statements published in the specialized press and by research institute like FECOMÉRCIO-SP, together with the implementation of actions aligned to an omni-channel strategy such as the integration of sales channels, generated very significant financial results

When observing the fundamentals of the theoretical proposition with omni-channel initiatives, such as integrating physical stores with the online store, implemented by RETAILER and its financial results, it can be affirmed that the proposition was corroborated.

#### 4.2.5 P5: The Omni-Channel Strategy Calls for Integrated Inventory Management

Hübner, Wollenburg & Holzapfel (2016) show that integrated stock management is a key part of improving the consumer buying experience by providing faster and more efficient customer service than per-channel management. On the other hand, Ishfaq & Raja (2017) point out that the adoption of integrated inventories offers the consumer more possibilities of attending to their requests even though in this scenario, EY (2015) warns of the complexity of the supply chain management and consequently of the management of stocks.

Emrich, Paul & Rudolph (2015) point to the assortment of products offered in the online store and the physical store. The authors caution that the adoption of long-tail is not always reflected as an increase in consumer perceptions of convenience and variety.

The study's organization has implemented initiatives to improve the consumer buying journey and, consequently, in the experiences that this consumer experiences. This improvement is that the stockout rates in both the consolidated view and the per-channel view have been reduced. In physical stores, the stockout rate fell from 10% in 2016 to 5% in 2017. In the online store, the reduction was significant, from 55% in 2016 to 6.3% in 2017. In the consolidated view, the decline was 21% in 2016 to 5.3% in 2017. It appears that the consumer started to find the desired product more often. In addition, the delivery times of the product purchased by the consumer have been reduced. It occurs when the consumer buys a product from the online store and the stock using to deliver to him is in a physical store closer to home.

For these initiatives to take effect, it was necessary to unlink the inventory from the sales channel. The stock belongs to the company, not the sales channel, and its allocation is based on an omni-channel strategy.

It is important to highlight some actions that RETAILER has taken to implement integrated inventory management. Collaborative decision-making processes permeated the organization, and interviews confirmed this change in the organization's mindset, previously managed from the perspective of the sales channel and now in the omni-channel consumer view. One can mention the initiative of the Logistics area that created advanced teams of consultants who had as one of the attributes to spread knowledge of inventory management in an integrated way in stores, distribution centers, and other impacted areas such as Marketing. A consequence of this collaborative stance monitoring the assortment of stores that started to consider the demand for a product in the BOPS modality. In this scenario, a product that was not part of the assortment of the physical store may become part due to the demand of customers who wish to withdraw the product purchased in the online store. The benefit to the consumer is the reduction in delivery time due to withdrawal at the store.

Therefore, it can be affirmed that proposition P5 is true because the implementation of the initiatives was only possible from the unification of the stocks and the adoption of integrated management.

**4.3 Impacts caused by Omni-Channel strategy**

Table 4 summarizes the impact of implementing the ommi-channel strategy based on the theoretical evidence (found in the bibliography consulted) and the empirical evidence (obtained through the case study).

It is possible to observe that there are impacts in both operational and organizational aspects. There is a clear need to reorganize various supply chain management processes, such as managing product deliveries in the physical store. These stores and the entire supply chain were prepared for supply operations, receiving consolidated products. They now had to prepare to receive fractionated products for delivery to consumers who bought them in the online store. Consequently, the store had to organize itself to meet a more significant influx of consumers that could eventually be taken to new purchases, this time in the physical store. Besides the operational aspect, it was necessary to prepare the store's sales team for the omni-channel concept and avoid a possible conflict of channels as the bibliographic researched alert. The human aspects can not be neglected in transformation processes, such as the implementation of this strategy. It is still important to highlight the internal reorganization that is necessary. Functional areas that operate segregated by channel need to adopt a new posture, more integrated and collaborative, as strategy demands. In this sense, processes that define and monitor inventories are essential. One can cite the S & OP process that originated in the industry and also applies to retail. This process is integrating all areas under a common goal that can be the improvement of the service provided to the consumer with the generation and maintenance of revenues in a sustainable way.

It is worth highlighting the actions that the company that is the subject of the case study has been taking to adapt to the new strategy. Reviewing business processes and implementing new systems to support these processes are part of fully integrating channels, a consumer demand. The role of technology can also be highlighted in the alignment of the sales price; a condition highlighted in the literature to ensure a buying journey permeated by satisfactory experiences for the consumer. The same happens in the management of product delivery processes to the consumer with technology support that monitors the entire delivery process. And the support of technology in planning support systems is hugely relevant.

Still worth mentioning organizational initiatives such as forming a dedicated team to act on inventory management processes, a prominent topic in reports from specialized consultancies and scientific research. The performance of this team is not limited to the area of logistics itself. Still, it goes further, interacting strongly with other areas such as Marketing and Sales in a collaborative way to maintain the balance between stock, demand and level of service provided to the consumer.

The impacts resulting from the initiative of transforming the physical store into a small center of distribution deserve attention since this project, although still in the pilot phase in the company, is very much in line with the omni-channel strategy and it is common to find research on the new role of the physical store in retail. While is possible observe challenges in the management of inventories there are also opportunities in terms of optimization of these stocks and a significant increase of convenience for the consumer.

Also on the aspect of consumer convenience, we can highlight the impacts under the reverse logistics process that allows the consumer to return the product purchased in the online store in physical stores. Reorganizing the internal processes to fit the physical store to handle these returns is something that has been occurring in the company and is in line with the expansion of the process of BOPS model, a model that has been widely accepted by the consumer.

Therefore, it is possible to notice impacts that require adjustments in the supply chain processes, but it should be noted that the initiatives demanded by omni-channel offer a counterpart in terms of consumer satisfaction and financial results.

*Table 4 – Omni-Channel initiatives and impacts based on case study*

| OMNI-CHANNEL INITIATIVE | WHAT IS? | IMPACTS | CASE STUDY |
|---|---|---|---|
| Same price for all sales channels | Adopt the same or similar prices in physical stores and online store. | Need to implement systems that consider all business variables (taxes, competitors, margins) to determine the correct price;<br>Review processes and organization for definition of price policy independent of the sales channel | YES. The company has acquired a tool that considers several variants to establish prices that guarantee adequate margins for the operation.<br>YES. The company has unified its business planning areas. |
| CC: Click & Collect /BOPS | The consumer buy online and pickup at the store. | Increase in the uncertainty of the demand in the store and consequent difficulty in determining the store's ideal stock / ideal assortment;<br>Increase of the picking operation in the Distribution Center (DC);<br>Adequacy of the physical and organizational structure of the physical store;<br>Reduction of Delivery Freight Cost;<br>Increased customer flow in the store and possible conversion increase;<br>Best consumer buying journey due to lead time reduction. | YES. To respond to this uncertainty, the company established a process of periodic review of the store's portfolio and implemented a process of S & OP - Sales and Operations Planning involving several areas including physical store managers.<br>YES. The company reorganized the operation on the DC to meet this demand.<br>YES. The company created an exclusive area in the physical store for handling and delivering consumer products which were bought at online store.<br>YES. As the consumer himself has withdrawn the product in the store has reduced the freight delivery expense.<br>IT WAS NOT POSSIBLE TO CONFIRM.<br>YES. The acceptance of this modality of purchase by the consumer proves its effectiveness. |
| CR: Click & Reserve online/pickup at the store | Consumer has access to the stock available in the Physical Store or even in the distribution center and can make a reservation of the product for later billing and withdrawal in the physical store. | The need to implement procedures and systems that make it possible to make visibility of stocks of physical stores and DCs through the website;<br>Increases the complexity of inventory management available in the physical store and on the DC;<br>Reduction of Delivery Freight Cost;<br>Increased customer flow in the store and possible conversion increase;<br>Best consumer buying journey due to lead time reduction. | YES. To respond to this uncertainty, the company established a process of periodic review of the store's portfolio and implemented a process of S & OP - Sales and Operations Planning involving several areas including physical store managers.<br>YES. The company reorganized the operation on the DC to meet this demand.<br>YES. The company created an exclusive area in the physical store for handling and delivering consumer products which were bought at online store.<br>YES. As the consumer himself has withdrawn the product in the store has reduced the freight delivery expense.<br>IT WAS NOT POSSIBLE TO CONFIRM.<br>YES. The acceptance of this modality of purchase by the consumer proves its effectiveness. |
| Physical Store acting as a small Distribution Center | Physical store billing and shipping to the consumer independent of the sales channel used to purchase the product. In addition, the physical store also operates supplying other stores, replacing the Distribution Center. | Increase in the uncertainty of the demand in the store and consequent difficulty in determining the store's ideal stock / ideal assortment;<br>Adequacy of the physical and organizational structure of the physical store;<br>Streamlines and optimizes inventory turnover through transfers to other stores and / or consumer sales<br>Possible reduction of Delivery Freight cost due to the proximity of the stock of demand points (delivery place);<br>Increased transport and inventory management complexity due to increased inventory dispersion. | The project of physical stores acting as mini-hub of distribution (mini-hub) is pilot phase with 5 stores. Adjustments are being made to expand the operation in the second half. The company also created a dedicated team of internal logistics consultants to monitor the implementation of the project in the physical stores. |
| Logistics operations integration at the DC (mainly stock) | The Distribution Center ceases to be segregated by sales channel and starts to serve all operations independent of the sales channel | Increase in the complexity of the operation that starts to meet shipments of different characteristics: fractional load (Orders of Online Shop) and Consolidated (Orders to Supply the Physical Store).<br>Optimization of inventories that are no longer segregated by sales channel and begin to meet the consolidated demand (Physical Store and Online Store);<br>Stockout reduction due to inventories optimization. | YES. Increase in the complexity of the operation that starts to meet shipments of different characteristics. Fractional (Online Shop Purchase) and Consolidated (Physical Store). At the end of 2017 the company made investments in equipment for the DC and in systems for transportation management.<br>YES. Stock optimization by eliminating duplicity in the consolidated view compared to channel view.<br>YES. The stockout indices showed a significant reduction in all dimensions analyzed: per channel and consolidated company. |
| Provide Innovative Delivery Options for the Consumer (last mile) | Provide the consumer with options other than the usual delivery, such as: lockers, points of flow of people such as post offices, gas stations and shopping centers. | Requires the need to hire a specialized third party service as lockers suppliers and establish partnerships with companies (gas stations, post offices, malls);<br>Institutional gains (the retailer's image and the customer's best shopping journey through convenience. | YEA. The company has developed partnerships with specialized service providers for the use of lockers and a network of gas stations.<br>Institutional gains (the retailer's image and the customer's best shopping journey through convenience). |

To be continued

*Table 4 – Omni-Channel initiatives and impacts based on case study*

| OMNI-CHANNEL INITIATIVE | WHAT IS? | IMPACTS | CASE STUDY |
|---|---|---|---|
| Returns and changes in Physical Stores (reverse logistics) | Allow the consumer to use the structure of physical stores to make an exchange or return of the product purchased independent of the sales channel used | Adequacy of the physical and organizational structure of the physical store to receive consumer products;<br>Speed inventory replenishment if returned product can be resold;<br>Best consumer shopping journey due to the convenience offered. | DO NOT. The return of products purchased through the online store can only be performed through collection service. Except products which were bought in the BOPS model. |
| Implement Full Inventory Visibility to Customer (Cross Channel Inventory Optimization) | Allow the sales team and also consumers to have full visibility of the inventories in the company (Stores, DCs and possibly suppliers) | Need to implement systems and management processes (Order Management System) in parallel to the maintenance of legacy systems;<br>Need to implement technology and support processes to improve inventory controls in physical stores such as using radio frequency tags;<br>Optimizes the use of inventory according to predefined business rules: better customer service and sustainable sales margins. | YES. The company has strengthened its systems and processes to ensure inventory accuracy both in stores and DCs with dedicated staff.<br>YES. Partially. The definition of the best output location of the product is part of the scope of the small DC project that is in the pilot phase. Some rules have already been set for the system to decide to use product from the small DC (physical store) or to use the product from the nearest DC.<br>YES. Partially. Punctual cases of consumer satisfaction were reported in interviews. |
| Implement the Omni-Channel organization | Delete organizational structures segregated by sales channel | Need to revise / adapt organizational structure. From: Organizational Structure by Channel, To: Consumer-Oriented Organizational Structure;<br>Elimination of organizational silos through the implementation of a consumer-oriented structure, generating more communication and collaboration and also eliminating overlapping functions. | YES. Areas that operated separately, such as Commercial Planning & Pricing and Marketing, which focused on the channel were unified with a focus on serving the company, not the sales channel. |
| Withdrawal of the Product by the consumer in the DC (PickUp in DC) | Retailer offers the consumer the possibility of withdrawing the product in the Distribution Center speeding the delivery. | The need to review / adapt the organizational and physical structure of the DC to allow withdrawal of the product by the consumer;<br>Best consumer buying journey due to reduced lead time and increased convenience. | Not Implemented |
| Ship products directly to the consumer from the Supplier, without having to go through the retailer's installation (Ship Direct to Customer) | Implement shipments direct from supplier to consumer. | The need to implement partnerships and their organizational / operational structure to allow shipments from the supplier to the consumer;<br>Necessary high degree of partnership with the supplier involving information of availability and visibility of the inventory;<br>Reduction of storage and handling costs in the operation of the retailer;<br>Best consumer buying journey due to lead time reduction. | Not Implemented |

Source: Author based on case study

## 5 Conclusion

The identification of the impacts resulting from the Omni-Channel implementation was accomplished by validating a group of theoretical propositions obtained from a literature review and the results of a case study in a retail company that operated in a multi-channel structure.

Regarding this integration, the RETAILER highlighted several synergies, such as the on-time impact of reducing the cost of inventories/working capital of R$ 325.000.000 due to the optimization of duplicate stocks. In addition to financial gains, initiatives aligned with the omni-channel strategy were highlighted, such as the acceleration of the BOPS modality, the reduction of stockout rates, and the benefits of multi-channel marketing. The same statement highlighted the efficiency of the transportation cost, the optimization of the purchasing process, and the sharing of distribution centers.

This integration movement occurred when retailers had a very challenging time at the end of 2015. In other words, in response to an adverse environment, the RETAILER reorganized itself by adopting a strategy that meets consumer demands and a year later presents significant results in both financial terms and the satisfaction of this consumer. It can be said that the case study was able to demonstrate that the adoption of the omni-channel strategy allied with the individual actions in the processes of planning and management of the supply chain contributed to the successful implementation of the strategy.

This study also concluded that there is an alignment between the bibliographic research and the researched environment. Among the solutions presented, it is worth mentioning the need for intensive use of technology tools. This technology is already available, and this is highlighted in all surveys and reports from consulting firms. However, it is essential to treat the omni-channel not as a technology project but as a business transformation project. In other words, in addition to technology, it is fundamental to address behavioral aspects. These initiatives will only be sustainable in the long run without the mentality of departmental silos that do not communicate or understand the business as channels when the consumer does not see these channels. One way to overcome these barriers is to implement integrative processes such as S & OP, where the most significant barrier is behavioral and not just technology or processes. For the success of these initiatives, it is also necessary to consider them as an action aligned with the company's strategy. It is still important to highlight the relevant results in the financial aspect since the bibliographic research also drew attention to investment and the return of the omni-channel implementation. Creating business differentials that generate sustainable results for the business is a basic premise in a very competitive environment. The initiative has to generate results, and for this, as some specialized consultancies call attention, transformations in the supply chain are fundamental.

## 6 Implications and Further Research

As a relevant contribution of the study, it is possible to cite the positive effect of implementing the omni-channel strategy. It worked as a leverage tool for the financial results improvements. Also, the organization was able to build a combination of its competitive advantages over other retailers compose of its network of physical stores with national coverage, its brands, and the omni-channel strategy. Only a few competitors would be able to achieve in this position in the short or medium term.

Regarding the limitations of the research, replicating the findings of the single case study could be done by conducting other studies involving other organizations (YIN, 2015). In this way, the conclusions could be considered more robust. The impacts can vary depending on maturity in terms of technology usage, process management, organizational culture, competitive environment, top management support, etc. Moreover is important to consider the speed of new technologies, like artificial intelligence, face recognition, autonomous vehicles in warehouses, 5G, etc. These tools will keep the retailers in constant change.

To minimize these limitations, the researcher sought other sources of information like following the conference calls to present results to the market (investors and stockholders) and reading and analyzing the relevant facts disclosed by RETAILER following the practices of corporate governance. Finally, on results declared to the capital market, it is important to mention that these are consolidated business data.

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