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Why retail firms commonly get only halfway through channel integration with online channels

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Abstract

Purpose – This paper aims to examine why retail firms seldom achieve full integration of online and offline channels as prescribed in omni-channel literature. It examines the intermediate process of channel integration from an internal, operational perspective.

Design/methodology/approach – This study is composed of two parts. In the first part, the authors interviewed informants from nine firms that were engaged in channel integration. In the second part, the authors conducted case studies with three firms from the cosmetics and skincare industry against the backdrop of the COVID-19 pandemic to find evidence to support or negate the propositions made in the first part.

Findings – The first part identified six operational challenges to channel integration. The authors categorized these challenges into two groups: inter-channel communication and inter-channel competition. Inter-channel competition carries more weight at the latter stage of integration. The authors also identified two antecedents that affect the seriousness of these challenges: heterogeneity among channels in business operation and external competitive pressure. In the second part, the authors found that both inter-channel communication and inter-channel competition were improved because of the external competitive pressure exerted by the COVID-19 pandemic. However, the heterogeneity of offline channels against online channels in business operation is a double-edged sword.

Originality/value – The study identifies the changing effects of the challenges of channel integration and their antecedents in the midst of integration. The positive influence of a specific dimension of channel heterogeneity against other channels increases and then decreases along channel integration. The identification of the changing effects lays the foundation for a finer stage model of channel integration.

Keywords Channel integration, Omni-channel management, Case studies, Inter-channel communication, Inter-channel competition, COVID-19

Paper type Case study

1. Introduction

How to include new channels and integrate them into existing channels so as to gain strategic advantages has attracted a great deal of attention from academic researchers and business managers over the years. Various channel management strategies such as multi-channel management and omni-channel management have been proposed (Neslin *et al.*, 2006; Verhoef *et al.*, 2015). Full channel integration of omni-channel commerce, as described by previous scholars, enables the best customer experience across channels (Verhoef *et al.*, 2015). Yet, in

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practice, the ultimate state of omni-channel commerce in which all channels are "interchangeably and seamlessly used" (Verhoef *et al.*, 2015, p. 175) by customers along the customer journey has rarely been achieved. The implementation of omni-channel commerce by firms has remained mediocre. Gartner Marketing Research (2021) even predicted that half of the firms would have failed in their plans to deliver frictionless omni-channel commerce in 2022 (Gartner, 2021).

In this paper, we examine the intermediate process of channel integration from a perspective of interdepartmental integration. The research question we aim to address is why retail firms commonly end up operating at a state of partial channel integration. We identify the potentially changing effects of the challenges of channel integration and their antecedents in the midst of integration. Although the intermediate processes of channel integration, such as stage models, have been advocated by some previous scholars, including Chaffey (2010) and Zhang *et al.* (2010), we note that previous researchers did not place enough emphasis on the dynamics of the internal interaction of operation among different channels of the same firm in the midst of implementing channel integration. Inadequate attention to the dynamics of the internal interaction of operation is problematic, since more thorough channel integration implies more complicated interaction among the people from different channels. The challenges that result from the interaction may become more difficult. In other words, the effects of these challenges are not static throughout the channel integration process. This study aims to fill this research gap by shedding light on the intermediate process of retail firms' channel integration. Identifying the changing effects of the challenges of channel integration and their antecedents lays the foundation for future researchers to establish a finer stage model of channel integration. Specifically, we propose that each dimension of heterogeneity should be introduced to channel members incrementally to better achieve full channel integration. Managers of retail firms should avoid exceeding cognitive attachment to experience orientation, which is a strong comparative advantage of offline channels at the purchase and post–purchase stages against online channels. They should also seize action windows to advance channel integration.

This study is composed of two parts. In the first part, we conducted interviews with informants from nine retail firms that implemented channel integration of their online and offline channels. We adopted an interpretative approach to analyze the qualitative data. We first drew on channel management literature, such as that of Lee *et al.* (2022), Neslin *et al.* (2006) and Verhoef *et al.* (2015), and conducted clustering of the firms based on their maturity of channel integration. We then adopted the perspective of interdepartmental integration and shed light on the intermediate process of channel integration to identify the challenges to its implementation. To identify the challenges, we drew on two common dimensions of interdepartmental integration, i.e. interaction and collaboration (Kahn and Mentzer, 1998; Verhoef and Pennings, 2012), and categorized them into two groups: inter-channel communication and inter-channel competition. The former group pertains to interaction, and the latter group entails the negative aspects of the collaboration dimension of integration. We found that both groups of challenges influence channel integration, but that inter-channel competition carries more weight at the latter stage of channel integration (i.e. from a state of partially integrated channels to a state of fully integrated channels). Two antecedents were found to mitigate the seriousness of the challenges to channel integration. The first antecedent is heterogeneity among channels, which refers to the number of introduced dimensions of one channel's comparative advantages against that of other channels. The second antecedent is the external competitive pressure generated by business environments.

In the second part of the study, we aimed to find evidence to either support or negate the propositions made in the first part of the study. To accomplish this, we conducted case studies with three firms in the cosmetics and skincare industry whose businesses had been adversely affected by the COVID-19 pandemic. These case studies resulted in both supporting and conflicting evidence of our propositions. In line with our expectations, inter-channel communication improved and inter-channel competition was mitigated in these firms in the face of the pandemic. However, in contrast to our prediction, we discovered that the heterogeneity dimensions among channels can be double-edged swords. A firm's specific dimensions of heterogeneity of offline channels against online channels can facilitate the initial channel integration from a state of separate channels to that of partially integrated channels. However, the tendency of a channel to preserve its comparative advantage of the work that pertains to this specific heterogeneity dimension against other channels can have a hindering effect during the latter stage of channel integration from a state of partially integrated channels to a state of fully integrated channels. We suggest that this "double-edged sword" effect of the heterogeneity among channels is the reason that many retail firms get halfway through channel integration with online channels.

The rest of the paper is structured as follows: Section 2 introduces the research background and the benefits of channel management strategies and interdepartmental integration. Section 3 and Section 4 describe the research design and methods of data collection. Section 5 and Section 6 present the findings and discussion of the first part and the second part of the study, respectively. The implications of the findings and limitations and suggestions for future research are presented in Section 7 and 8, respectively.

2. Research background

2.1 Channel management strategies

A channel refers to "a medium through which the firm and the customer interact" (Neslin *et al.*, 2006, p. 96). The establishment of new channels increases not only the cost of the offering but also the complexity of operational management (Zhang *et al.*, 2010). On the other hand, additional channels may lead to increased revenue, since new channels help a firm gain access to new markets and reach more potential customers (Neslin *et al.*, 2006; Weinberg *et al.*, 2007). Having multiple channels also enables a business to create strategic advantages by exploiting the benefits of certain channels and overcoming the deficiencies of others (Zhang *et al.*, 2010). Thus, channel management strategies are vital to managing multiple channels and developing strategic advantages. Two commonly discussed strategies of managing multiple channels in recent years have been multi-channel management and omni-channel management.

Multi-channel management is the "design, development, coordination, and evaluation of channels to enhance customer value through effective customer acquisition, retention, and development" (Neslin *et al.*, 2006, p. 96). Channels co-exist across each stage of a customer journey, but they are not necessarily connected to one another (Neslin *et al.*, 2006). The main goal of multi-channel management is to enhance amenity and convenience through a customer journey via an increase of contact points with customers (de Carvalho and Campomar, 2014). This channel management strategy is suitable if channels of a business target separate, non-overlapping market segments (Schramm-Klein and Morschett, 2005). Otherwise, the independence of channels may cause potential competition among channels, leading to channel cannibalization (Coelho *et al.*, 2003). Some customers may compare prices between two channels before deciding on the channel through which to do the purchase. This results in de facto direct competition between two channels of the same company.

The conflicts among channels in multi-channel scenarios lead to the thought of channel integration in processes, such as promotion, marketing, pricing, brand building and delivery, along the customer journey (Piotrowicz and Cuthbertson, 2014). If successfully implemented, channel integration can bring about synergies among channels and mitigate competition among them (Herhausen *et al.*, 2015; Hsieh, 2017). The omni-channel model is considered to be the ultimate state of successful channel integration (Verhoef *et al.*, 2015).

Omni-channel management is defined as "synergetic management of the numerous available channels and customer touchpoints" to provide seamless customer experience across all channels (Verhoef *et al.*, 2015, p. 176). Well implemented omni-channel commerce commonly refers to a model in which each channel is able to direct customers to every other channel (Mirsch *et al.*, 2016). Under this model, products or services are sold through all widespread channels, "whereby the customer can trigger full channel integration and/or the retailer controls full channel integration" (Beck and Rygl, 2015, p. 175). Moreover, the channels are "interchangeably and seamlessly used during the search and purchase process" by customers (Verhoef *et al.*, 2015, p. 175).

2.2 The benefits and challenges of channel integration

Many scholars have advocated the benefits of thorough channel integration. Cao and Li (2015) analyzed the data of listed U.S. retail firms and concluded that channel integration increases sales growth. The positive effect of integration is limited by customer experience at stores and online. Given that customers can choose from ubiquitous touchpoints of retailers for convenient shopping experience, Zhang *et al.* (2018) suggested that customer empowerment increases during the shopping processes across different channels owned by the same firm and that this empowerment would enhance customer trust, satisfaction and patronage. Focusing on the search and purchase processes, Emrich and Verhoef (2015) demonstrated that an online shop design with cues corresponding to the firm's brick-and-mortar stores largely enhances patronage. Many of these supportive studies examined channel integration from the perspective of customer experience.

On the other hand, a number of customer experience-oriented studies that considered multiple stages of the customer journey exposed some mixed effects of channel integration. For example, Pauwels and Neslin (2015) focused on not only the pre-purchase and purchase stages but also the post–purchase stage of the customer journey. Taking returns and exchanges into consideration, they revealed how adding offline channels to online channels affects a firm's revenue. Specifically, the addition of physical stores reduces catalog sales and increases returns and exchanges but has a mild effect on online sales. Fürst *et al.* (2017) highlighted the differentiation of tasks along the customer journey, such as lead generation and after-sales service and showed that differentiation helps mitigate vertical conflicts and improve inter-channel cooperation, whereas differentiation of market segments inhibits inter-channel cooperation in multi-channel contexts.

The road to a successful omni-channel model is full of obstacles. The boundaries among channels and touchpoints are blurred and channel arrangement can become more complex (Verhoef *et al.*, 2015). The emergence of various types of online and offline channels in recent years has also increased this complexity (Baxendale *et al.*, 2015). From an operational point of view, channel integration requires considerable communication and coordination among departments of various channels (Hansen and Sia, 2015). Competition for sales and resources among channels in the midst of channel integration is often inevitable (Kim and Chun, 2018; Neslin *et al.*, 2006). The case study of Picot-Coupey *et al.* (2016) of a French online eyewear retailer demonstrated that the process of integrating brick-and-mortar stores into the online business model required a great deal of trial and error and organizational learning. Ye *et al.* (2018) identified the ability of management to change the structure and value of their organizations as one of the main challenges of omni-channel integration. Hübner *et al.* (2016) proposed that having misaligned mindsets among different departments is another major obstacle to omni-channel integration. Hajdas *et al.* (2022) summarized several papers about obstacles of channel integration, including those of Mirsch (2016) and Herhausen *et al.* (2015), and concluded that resolving internal, employee-related issues seems to become more challenging as channel integration increases. Cocco and Demoulin (2022) also supported that retailers have to overcome obstacles related to the alignment of marketing messages and prices across channels at the beginning of channel integration. Both studies indicated that the seriousness of the challenges of channel integration may vary across the channel integration process.

The intermediate processes of channel integration, such as stage models, have been advocated by previous scholars including Chaffey (2010) and Zhang *et al.* (2010). Previous researchers, however, did not place enough emphasis on the dynamics of the internal interaction of operation among different channels of the same firm in the midst of implementing channel integration. For example, Cao and Li (2015) consolidated information on the annual reports of listed firms in the U.S. and identified the key indicators of the four stages of channel integration, but these indicators were merely targets to be achieved at each stage. Lewis *et al.* (2014) examined challenges along the stages of channel integration, but the challenges were limited to those related to technological use. Only Picot-Coupey *et al.* (2016) have examined the blurred boundary between online and offline channels and the challenges to interaction among channels, yet they focused only on one eyewear e-tailer's addition of offline channels to its online channels. Moreover, the setting of their study differs widely from that of many retailers who established their businesses offline at the outset.

2.3 Interdepartmental integration

Previous literature has defined interdepartmental integration from two main dimensions (Kahn and Mentzer, 1998; Verhoef and Pennings, 2012). The first dimension is interdepartmental interaction. Interaction refers to the exchange of information among departments, the formats of which include meetings and documentation (Ruekert and Walker, 1987; Kahn and Mentzer, 1998). In an interactive environment that is not collaborative, departments may view themselves working independently with fixed contact points, e.g. regular meetings, with other departments (Kahn and Mentzer, 1998). The second dimension of interdepartmental integration features collaboration, which involves the sharing of work and resources among teams (Verhoef and Pennings, 2012). In a collaborative environment, departments view themselves as acting interdependently with other departments and they are willing to work together toward a shared goal (Kahn and Mentzer, 1998).

Both interaction and collaboration among departments have been considered conducive to performance success despite being difficult to achieve (Maltz and Kohli, 1996; Lawrence and Lorsch, 1967). The extent of interdepartmental interaction and collaboration may be influenced by various factors, including firm size, organizational climate, the formalization and centralization of organizational structure, the background and leadership style of senior management, task specification, and project ambiguity as well as the internal evaluation and reward systems (Cao and Li, 2015; Dewsnap and Jobber, 2000; Ellinger, 2000; Menon *et al.*, 1997; Moenaert and Souder, 1990; Smythe, 2000). External factors, such as business environments and competitors' actions, may also influence interdepartmental integration. For example, Cao and Li (2018) found that firms tend to integrate channels when more competitors adopt channel integration, and they argued that firms tend to follow their industry competitors to gain the support of stakeholders and avoid the unnecessary loss of social legitimacy.

3. Research design

A qualitative approach was adopted to explore challenges and their antecedents along the integration of online and offline channels. In contrast to previous studies of channel management, which focused on how and why separate channels should be integrated, this study investigates why firms cease to pursue further channel integration once they have achieved a certain level of channel integration from an operational perspective. Our research domain is on the intermediate process of channel integration and entails a holistic view of the customer journey. As this topic has not been adequately examined in previous studies, it is still at an early stage. Thus, we adopted a case study approach to conduct our research study (Benbasat *et al.*, 1987; Eisenhardt, 1989; Lee and Cheung, 2004; Siggelkow, 2007). This research study is composed of two parts, the details of which are presented below.

3.1 First part of the study

In the first part, we conducted semi-structured interviews with managers or executives responsible for the online channels of nine retail firms. The informants were senior enough to be involved in a discussion about the strategic implementation of channel integration in their respective firms. The interviews were conducted face-to-face and on a one-on-one basis. The selection criteria for retail firms participating in the interviews were as follows: First, the retail firms had both online and offline channels. Second, they had initiated plans to integrate their online and offline channels for at least two years. Third, the choice of companies was as diverse as possible with respect to firm size (i.e. the number of offline stores) and corresponding industries. The selection criteria enabled us to evaluate the influence of these factors, namely, firm size and industry, to strengthen the application of the conclusions drawn from the interviews to firms of different sizes in various markets (Miles and Huberman, 1984, 1994).

Two complementary data sources were used. First, additional background information about the firms was collected from company websites and journalist articles. The information helped us understand the social and organizational contexts in which the informants and their colleagues developed their thoughts and actions. These complementary data stimulated our thoughts on the "underlying coherence" (Taylor, 1971, p. 3) of our interpretation. The use of multiple data sources mitigated any biased preconceptions of researchers and informants and ensured data consistency (Dubé and Paré, 2003; Leong *et al.*, 2016). Triangulating the interview data with information on the company websites and journalist articles reduces the likelihood of misinterpretation and enhances external validity (Eisenhardt, 1989; Volmar and Eisenhardt, 2020). Second, we invited industry experts to advise us on the respective channel integration maturity of these firms. This helped to enhance the creative potential of the study and confidence in our findings (Eisenhardt, 1989).

3.1.1 Procedures of analysis. The analysis was conducted using an interpretative approach, which helps researchers explore "human thought and action in social and organizational context" (Klein and Myers, 1999, p. 67). Following Klein and Myers' (1999) seven principles for interpretative field research, we analyzed and interpreted the data collected (see Appendix 1). We used the existing knowledge of channel management strategy (Lee *et al.*, 2022; Neslin *et al.*, 2006; Verhoef *et al.*, 2015) and frameworks of interdepartmental integration (Kahn and Mentzer, 1998; Verhoef and Pennings, 2012) as our theoretical lens through which to understand the maturity of channel integration and interdepartmental dynamics in the firms throughout the channel integration process.

We first grouped the firms into clusters based on their maturity of channel integration. We started by inviting two industry experts to determine the clusters of the firms on the basis of our interview data and public information. Both experts were senior marketing managers in retail businesses. First, the two experts determined the clusters of the firms independently. In contrast to the managers, who tended to view the grouping from a practical perspective, we concurrently determined the clusters of the firms from a relatively theoretical perspective. Adopting the perspective of seamless customer movement, we define channel integration as a continuum in which the two ends are the state of separate multiple channels and the state of fully integrated channels, and we refer to partial channel integration as the incomplete integration among channels. Under partial channel integration, consumers can move seamlessly across *some, but not all,* channels at *some, but not all,* stages of their customer journey. The customer journey can be divided into three stages: the pre-purchase stage, the purchase stage and the post–purchase stage (Lemon and Verhoef, 2016). The pre-purchase stage pertains to customers' need for recognition, consideration and search, whereas the purchase stage focuses on customers' choice, ordering and payment. The post–purchase stage is mainly concerned with the consumption, usage and engagement of customers.

We then followed Lee *et al.* (2022) to determine the clusters of the firms. Specifically, Lee *et al.* (2022) proposed a systematic approach to distinguish a partially integrated channel model, O2O (Rampell, 2010), from multi-channel (Neslin *et al.*, 2006) and omni-channel models (Verhoef *et al.*, 2015). They identified five dimensions, namely, information exchange, online ordering, directional integration, locality and offline experience, to differentiate various online/offline channel models. Subsequently, we discussed our answers with the experts and reached a consensus to decide on the clusters assigned to the firms.

We then analyzed the data using three common coding techniques: open coding, axial coding and selective coding (Corbin and Strauss, 1990; see Appendix 2). The content, together with some other qualitative data, was coded by two independent coders to identify the operational challenges among channels. When the coders' analyses were inconsistent, they would have a discussion. If the discussion did not lead to a consensus, they would re-code the content and discuss it again. The processes were repeated until the identified challenges of interdepartmental integration among channels converged. These steps of the processes are commonly practiced in qualitative studies and have been used in multiple case studies such as that of Ramesh *et al.* (2010).

Lastly, we followed Eisenhardt (1989, 2021) to conduct a cross-case search for the differences among the three clusters of firms and identified the importance of different types of challenges and their antecedents. To find the antecedents, two independent coders conducted the same aforementioned coding processes, i.e. open coding, axial coding and selective coding in Corbin and Strauss (1990), with all the available data to identify the antecedents with a consensus. Based on the findings in the first part, we then put forward our propositions to our readers.

3.2 Second part of the study

Competition in retail businesses had become rather fierce since January 2020 due to the COVID-19 pandemic. Against this backdrop, we conducted case studies with three firms in the cosmetics and skincare industry to identify indicative evidence to support or negate our propositions made in the first part. We interviewed each informant of the three firms multiple times over a period of approximately a year and a half (from August 2020 to December 2021). We observe the progress of channel integration among these firms under the external pressure exerted by the COVID-19 pandemic. Similar to the informants used in the first part of the study, these informants were senior enough to involve in formulating and implementing strategic responses to the pandemic. Additional background information was collected from company websites and journalist articles. The information enhanced our understanding of the social and organizational contexts in which the informants and their colleagues developed their thoughts and actions.

3.2.1 Procedures of the analysis. Based on the findings and propositions in the first part, we adopted a positivist approach to conduct our qualitative study in the second part. Specifically, our interviews focused on how external pressure affects the internal interaction among channels and how dimensions of heterogeneity among channels affects channel integration.

4. Data collection

4.1 First part of the study

Interviews were conducted between October 2018 and February 2019. The interviewer would prepare lists of questions and send them to the informants before the interviews. During each interview, the interviewer jotted down notes and asked follow-up questions according to the informants' feedback. A tabular summary report was prepared within one day after each interview. Each interview lasted for around 1 hour, and roughly 600 minutes in total was spent on all interviews. Three of the informants (Firms B, H and I) were reluctant to have the interviews recorded. The other six interviews were recorded and professionally transcribed. Table 1 shows the role of informants and the diversity of the nine firms in terms of the type of industry and the size of their offline channels. Additional background information of the firms was also collected from company websites and mass media sources. Appendix 3 presents a brief background of each firm.

4.2 Second part of the study

Multiple interviews with each informant of the firms were conducted between August 2020 and December 2021 amid the COVID-19 pandemic. The format used for the interviews was the same as the one used in the first part of the study. Each interview lasted for around one hour. Interviews with the informants of Firms J and K were recorded and professionally transcribed. The informant of Firm L requested that the interviews not be recorded for more open sharing, as she considered that some questions about internal operations involved sensitive business information. Notes were taken by our researchers during the interviews. A tabular summary report was prepared within one day after each interview. Table 2 shows the role of informants and the backgrounds of the three firms. Additional background information of the firms was also collected from company websites and journalist papers. Brief background information of these three firms is shown in Appendix 3. Appendix 4 shows the timeline of interviews conducted in the second part.

5. Findings from the first part of the study

5.1 Clustering of firms

Based on our qualitative analysis and subsequent discussion with the two industry experts, we identified three clusters of firms, namely *poorly integrated*, *fairly integrated,* and *well integrated*. Firms A, B, D, G and H are classified as *poorly integrated*. These firms swung toward the state at which a business operates via separate channels. All of the firms offered self-pickup services at stores. However, the integration between the two channels was poorly

Interviews conducted between October 2018 and February 2019

Firm	Size (in terms of the number of offline stores)	Approx. No. of outlets	Industry	Role of informant
Firm A	Large	Over 70	Electrical Appliances	Assistant Marketing Manager
Firm B	Large	Over 60	Telecommunication	Deputy Head
Firm C	Small	2	Cosmetics	Marketing Manager
Firm D	Small	5	Fashion	E-commerce Executive
Firm E	Small	7	Multiple	Merchant Relationship Manager
Firm F	Medium	Over 40	Kitchenware	Marketing Executive
Firm G	Medium	Over 30	Electrical Appliances	Assistant E-commerce Manager
Firm H	Medium	Over 30	Cosmetics	Regional E-commerce Manager
Firm I	Large	Over 60	Jewelry	E-commerce Supervisor

Source(s): Authors' own work

Table 1. Roles of the informants and the diversity of firms in the first part of the study

managed. The frontline staff of these firms did not seize the opportunities for face-to-face interaction with the customers who visited offline stores to collect their products from online purchases. The offline channels served only as spots for collecting purchased products. The advantages of face-to-face interaction at offline stores were overlooked.

Firms C and F were classified as the *fairly integrated* cluster. In comparison to the previous five firms in the *poorly integrated* cluster, the frontline staff of these three firms received training in online shopping platforms. The staff were highly familiar with their firms' online promotion. They helped resolve customers' inquiries about online purchase channels at the pre-purchase stage of the customer journey. In contrast to Firm H, which mainly sold cosmetic products, Firm C offered facial treatments that were mainly consumed at the brick-and-mortar centers. At Firm C's centers, beauticians seized the face-to-face opportunities with customers and proactively promoted other services and products. Firm F, in comparison to Firm A and Firm G, which also sold home appliances, made more effort to place various promotional materials of online stores at their brick-and-mortar sites, driving offline customers to online stores. In short, Firms C and F performed substantially better than those firms in the poorly integrated cluster on the *differentia specifica* offline experience (Lee *et al.*, 2022).

Firms E and I were classified as belonging to the *well-integrated* cluster. Firm E's frontline employees proactively took advantage of face-to-face interaction at stores to educate customers on how to use their firm's website and mobile app to place orders. Customers could pick up online orders at its stores. The frontline employees would also persuade customers to purchase more at the stores using the mobile app, which enabled customers to pay via electronic payments. In addition to integration from online channels at the pre-purchase and purchase stages to offline channels at the post–purchase stage, Firm E successfully integrated offline channels at the pre-purchase stage to online channels at the purchase stage of the customer journey. This integration not only provided customers with more payment options but also reduced the workload of cashiers at their stores.

As for Firm I, its frontline staff were equipped with tablets which were used to show Firm I's online store to their customers at its stores. A larger variety of products could be shown to customers through the online catalogues. The customers could then immediately make their purchases via the online platform under the guidance of frontline staff at the brick-and-mortar stores. The integration from offline channels at the pre-purchase stage to online channels at the purchase stage was seamless. In short, both Firms E and I performed substantially better than their counterparts not only on the *differentia specifica* offline experience but also on online ordering and information exchange (Lee *et al.*, 2022). Both firms allowed customers to pay electronically, but they also presented a wider variety of products and corresponding product information using online platforms.

Interviews conducted between August 2020 and December 2021 amid the COVID-19 pandemic

Firm	Size (in terms of the number of offline stores)	Approx. No. of outlets	Industry	Role of informant
Firm J	Small	4	Cosmetics and Skincare	Business Development Director
Firm K	Large	70 consignments at a leading health and beauty retailer in HK	Cosmetics and Skincare	Marketing Manager
Firm L	Medium	28	Cosmetics and Skincare	Digital Marketing Manager

Source(s): Authors' own work

Table 2.
The roles of informants and the background of firms in the second part of the study

5.2 The challenges of channel integration

Through the data coding processes, we identified six operational challenges of interdepartmental integration among the channels and categorized them into two groups: inter-channel communication and inter-channel competition. Inter-channel communication pertains to interdepartmental interaction as described in previous literature (Kahn and Mentzer, 1998; Verhoef and Pennings, 2012). Emphasis was placed on information flow among the stakeholders of departments in various channels. Inter-channel competition is inclined toward interdepartmental collaboration in similar literature, but focuses mainly on the negative aspects of collaboration, given that we were looking for the challenges, rather than the facilitators, of channel integration. Each group consists of three challenges.

5.2.1 Inter-channel communication. 5.2.1.1 Responsiveness of decision makers. In contrast to the relatively static offline business environments, online environments are rather dynamic. Thus, an online team has to be more responsive to market changes (Bharadwaj *et al.*, 2013). Differences in the norm of decision-making time between channels result in slow responsiveness to changes in online markets. For example, the business of Firm B, a large multinational telecommunication service provider, was not online-oriented. It had imposed internal red-tape procedures for reporting. Regardless of whether a message was a top–down instruction or a bottom–up proposal, the message in Firm B had to go through several levels before reaching the intended recipients. The complicated and tedious communication procedures in Firm B limited its adaptability to address changes in the dynamic online environment. Informants of Firms A, B, D, G and H also acknowledged that slow communication between the two channels posed challenges to good channel integration.

In contrast, the online and offline pre-purchase marketing of Firms C, E and F were managed by the same teams. These teams had full control over promotion and pricing for both channels. Hence, there was less concern about delayed decision-making communication due to channel integration, given that the lines of communication were shorter.

5.2.1.2 Common vision and direction. Senior management is responsible for setting the strategic direction of a firm (Hambrick, 1989; Lenz and Lyles, 1986). In the context of integration among various channels, only members who are more senior than the respective heads of the channels can help shape a common vision and direction for various channels. The senior member needs to be capable of communicating effectively with junior workers of each channel so that the workers can gain common languages and cognitive models regarding the changes in the organizations. Lack of a clear direction in channel integration and team reconstruction reduces the employees' willingness to take risks, initiate innovation and planning and solve problems (Longenecker *et al.*, 1999). When the direction is unclear, frontline employees are forced to interpret procedures and policies of new campaigns on their own. Under these circumstances, frontline workers tend to make risk-adverse business decisions which may not be in their firms' best interests (Longenecker *et al.*, 1999). Confusion and uncertainty lead to rumors and gossip and eventually increase workers' resistance to changes (DiFonzo and Bordia, 1998).

The informants of Firms A, B and D uttered phrases such as "lack of direction," "inadequate knowledge," and "not supportive" in the interviews. The top management of Firms A, B and D had no clear direction of channel integration. The messages of downward communication in these firms were rather confused:

> Because management lacks knowledge on online marketing and e-commerce, *top–down messages are not clear* . . .. other departments do not listen to you if there is no explicit top–down instruction from top management. – Assistant Marketing Manager of Firm A

Instead of simply setting up a new channel for customers to shop and purchase products/services, management needs to have a long-term vision of channel integration so that their directions can then be easily followed by their fellow employees. Firm E serves as a good example for illustrating this point. The chairman of Firm E was a high-profile businessman in Hong Kong who frequently spoke out in public about issues concerning business transformation. As a result, even people who did not work in Firm E might know the chairman's vision of his plan to expand the online retail market in Hong Kong. Thus, the employees of Firm E shared their chairman's enthusiasm and language about business development. The employees were willing to make the effort to support the plans for channel integration.

> (The chairman) puts a lot of effort into the online shopping platform, and *his ambition to build the largest e-commerce platform in Hong Kong is clear to us .... my colleagues share a common vision and are willing to follow the chairman's orders to achieve his goals.* – Merchant Relationship Manager of Firm E

Another example is Firm C, whose employees were strong believers of data analytics and digital marketing. The senior management was rather enthusiastic about big data concepts and data-driven strategies. Thus, the employees of different channels and departments in Firm C were willing to work together to achieve channel integration.

> *The whole company believes in data analytics and digital marketing*. Other teams are willing to work together to help the digital marketing team excel and drive more businesses. – Marketing Manager of Firm C

5.2.1.3 Knowledge exchange. Tacit knowledge exists in each channel. Good channel integration needs to facilitate the transfer of tacit knowledge across channels (Grant, 1996; Nonaka, 1994). For example, in contrast to e-commerce businesses, firms that have both online and offline channels benefit from face-to-face interaction between customers and frontline employees. Frontline employees interact with customers directly, and they can observe changes in customer preferences and attitudes from time to time. Frontline employees should then report these observed changes to other relevant departments of online channels in a timely manner to foster stronger responsiveness to markets.

> "Relationship managers have the contact numbers of the stores' frontline staff for enquiries about display products . . .. shop managers have regular meetings with the marketing team for promotion updates and they could *give timely feedback regarding the theme of shop displays and customers feedback*." – Merchant Relationship Manager of Firm E

Frontline salespeople are direct touchpoints for customers. If frontline staff have little technical or business knowledge about e-commerce, they will not be able to address customers' inquiries regarding purchases made through online platforms. Members of online channels should offer training and sharing sessions to members of offline channels. Good training and sharing lead to better knowledge transfer and eventually facilitates the full integration of two channels.

> "We have close communication with frontline sales since they represent our brand image, and our brand doesn't encourage hard sell. We want our sales to synchronize with our brand image and direction . . ..We also *provide regular training to ensure that our frontline staff have sufficient service and technical knowledge*." – Marketing Manager of Firm C

> "Retail sales would ask us about e-commerce inquir ies proactively . . .. some products offered exclusively online would be displayed at shops and we have to *provide product and technical training for the salespeople* . . .. they provide tablets to customers so that onsite they can immediately shop online." – E-commerce Supervisor of Firm I

5.2.2 Inter-channel competition. 5.2.2.1 Competition for sales. Cannibalization is usually inevitable if online and offline channels co-exist (Birkinshaw, 2001). Price comparison across channels is common and convenient nowadays (Schoenbachler and Gorden, 2002). Some customers may compare prices of products/services online but purchase them at offline stores. Other customers may compare the prices of all channels before placing an order. Such comparisons lead to direct competition among channels of the same firm (Piotrowicz and Cuthbertson, 2014; Verhoef and Donkers, 2005). Thus, even if customers do not place orders on a channel, the channel still contributes to the process at different stages of the customer journey. Nevertheless, sales figures have served as the longstanding metric for measuring the performance of offline channels. If the performance metrics do not change in the process of channel integration, sales competition among channels will persist. For example, the online and offline units of Firm D competed so intensely that the offline employees even discouraged customers from buying their clothes via Firm D's online channel. The two channels crowded into the purchase stage of the customer journey.

> *Promotions run separately*. They (members of our offline channel) dislike our discounts on online channels and *pull customers away from online channels*. – E-commerce Executive of Firm D

5.2.2.2 Competition for internal resources. Not only do the units of the two channels compete for sales, but they also compete for internal resources such as budget and materials (and even inventory stock). When a new channel is developed, internal resources will be redistributed. The longstanding channel will fight to prevent the redistribution of their resources. This counter-productive competition is fierce when people have a low level of psychological safety (Bradley *et al.*, 2012). Such people have a strong tendency to protect their original resources.

> "Top management would like to further develop e-commerce channels and export to other countries such as China. Therefore, we will set up an e-commerce team in China. *But offline retail and e-commerce share the same inventory pool, so resources must go to offline retail first* . . ..

> If our online sales perform better, *offline retail salespeople may not share the inventory with us.*" – Assistant E-commerce Manager of Firm G

> The retail (offline) channel takes first priority in *resource allocation*. – E-commerce Supervisor of Firm I.

5.2.2.3 Competition against status quo. Some retail firms' offline channels had a much longer history than their online channels. The influence of the personnel in the offline channels was deeply rooted in their firms, leading to a rather unfair competition between the online and offline channels. The senior management was cognitively attached to the previous successful model of offline channels and was not willing to adopt changes in business operation. The organizational climate of these firms was biased against placing equal emphasis on online and offline channels.

Firm A was the retail market leader for electronic appliances. Similarly, Firm B was a leading firm in the telecommunication service sector in Hong Kong. Both firms held an oligopolistic position and faced few challenges in their respective industries. These firms enjoyed considerable economies of scale and adopted a defender strategy (Miles and Snow, 1978).

> We developed an e-commerce channel because we wanted to *maintain the leading position in the market*. – Assistant Marketing Manager of Firm A

Under the shadow of the defender strategy, the longstanding offline channel of Firm A and Firm B had low motivation to compromise for the implementation of new business models. The longstanding offline channels got used to their winning formulas. They had a low tendency to accept new ideas and concepts. The longstanding performance metrics were not adjusted for the addition or integration of channels. They also had no incentive to coordinate with other channels, leading to difficulty in finding a common ground with the online channels.

5.3 Influence of challenges and their antecedents along channel integration

5.3.1 Influence of challenges along channel integration. Using the two groups of challenges as axes, we drew a 2-dimensional framework to discover the factors that influenced channel integration across clusters. Based on our evaluation in respect to the two groups of challenges, we then placed the firms onto the framework (Figure 1). A summary of our evaluation of the firms' performance in the respective challenges is presented in Appendix 5.

The performance of firms in the cluster of *poorly integrated* was varied. Among these firms, some performed relatively better in inter-channel communication, while others demonstrated less inter-channel competition among channels. To become more integrated, the *poorly integrated* firms have to overcome operational challenges of both inter-channel competition and communication. They need to perform well to a certain satisfactory level in both aspects. In comparison to the *poorly integrated* firms, the *fairly integrated* firms performed better in both dimensions.

The firms in the clusters of *fairly integrated* and *well integrated* performed similarly in inter-channel communication. These firms differed mainly in inter-channel competition. In order to become a firm with *well-integrated* channels, a *fairly integrated* firm has to exert extra effort to resolve inter-channel competition.

5.3.2 Antecedents of challenges. 5.3.2.1 The heterogeneity of offline channels against online channels. The extent to which a firm's services and products are experience-oriented affects channel integration from a *poorly integrated* business to a *fairly integrated* business. We discovered that offline salespeople who sold experience-oriented products and services tended to engage in better communication with online channels. Sales of these types of products and services rely heavily on the intense sensory experience of the products and services as well as close, face-to-face communication with customers at stores. Although Firm C and Firm H were both in the cosmetics industry, Firm H failed in inter-channel communication.

The products of Firm H were rather standardized, and its target customers were the young generation who were adaptive to online purchase environments. Thus, in

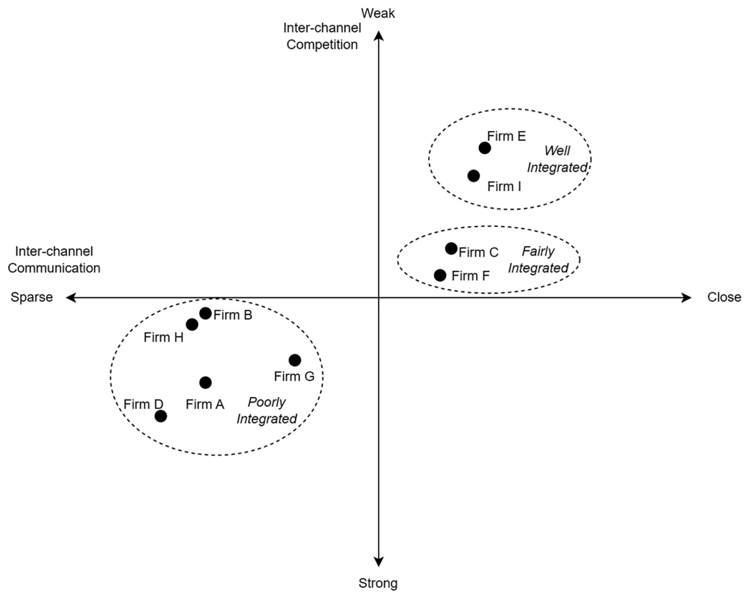


Figure 1.
Firms in the analytical framework (Not to scale)

Source(s): Authors' own work

comparison to the offline workers of Firm C, the offline workers of Firm H added little value to the customer experience through face-to-face interaction. The offline workers did not enjoy much comparative advantage of delivering face-to-face interaction, and they were likely under the illusion that Firm H's online channel was their competitor and would soon replace their jobs. The offline channel of Firm C, on the other hand, could easily safeguard their jobs and existence, since they sold experience-oriented services such as facial treatments.

Moreover, Firm C targeted the mature population who had high purchasing power. Sophisticated sales techniques are required to close deals for high-end services/products and these techniques help promote the offline workers' sense of job security. The workers tended to think that the online channels could not easily replace them. Thus, the offline workers in Firm C were not under the illusion that they were competing against the online channels of their firm and felt no urgency to withhold their tacit knowledge.

Another perspective of viewing comparative advantages among channels is the variety of products/services offered by each channel. Online catalogues can present more products/services to customers than offline shelves do at stores. Frontline workers of Firm I understood well that not all jewelry can be shown at the stores, and therefore they did not hesitate to use their tablets to present to the customers at the stores other products that could only be purchased online. Similarly, Firm E's retail stores were rather small, and the shelves could hardly present all the products that were available for purchase. Thus, workers at Firm E's stores had no reservations about persuading customers to purchase products via its mobile app.

The cost of handling transactions is another dimension of comparative advantages among channels. Firm E, which sold household goods, dispatched few staff to its brick-and-mortar stores and the staff did not want to work as both salespeople and cashiers, especially during busy times when the frequency of transactions was high. Therefore, the frontline staff would encourage customers to pay online even at the stores. On the other hand, Firms A and B both enjoyed their large market shares in the sectors of electronic appliances and telecommunication services, respectively. Their brick-and-mortar stores had sufficient, if not more-than-enough, manpower. Thus, the frontline staff were not under the illusion that they enjoyed comparative advantages of face-to-face interaction with customers against closing transactions at cashiers.

Lastly, the distance between brick-and-mortar stores and potential customers may also serve as another dimension of comparative advantage. If a firm has a small number of outlets, its frontline staff may tend to assume that online channels will reach customers who live far from the outlets. On the other hand, if the number of outlets is large, the frontline staff may be under the illusion that all potential customers can conveniently access physical stores. Online channels do not enjoy any comparative advantages with regard to reaching remote customers. From our case studies, Firm E and Firm C, both of which were more integrated, had only 7 and 2 physical outlets, respectively. Having a small number of outlets is conducive to channel integration. Although the fairly-integrated Firm F had over 40 physical branches, it identified certain branches as flagship stores and specifically integrated these flagship stores with online channels. This arrangement enhanced channel integration. On the other hand, Firms A, B, G and H of the poorly-integrated cluster each had more than 30 physical outlets. The large number of outlets had adverse impacts on channel integration.

We conceptualized these comparative advantages of channels, i.e. "experience orientation" for offline channels and "variety of products/services presented," "distance from remote customers," and "convenience of online payments" for online channels, as dimensions of heterogeneity among channels. The larger the number of the dimensions, the more heterogeneous channels a firm possesses. Thus, we propose the following:

P1. A retail business whose channels are more heterogeneous against other channels tends to integrate its offline channels with its online channels.

5.3.2.2 External competitive pressure. A firm's internal interaction and collaboration are affected by the pressure exerted by external environments. Firms are more motivated to explore and implement new business models in the face of external pressure. The story of Firm E illustrates this point well. Firm E had to compete against many department stores and supermarkets in Hong Kong which had established non-integrated online channels. Top management made the effort to explore and implement new business models to fight against oligopolistic supermarket chains. Firm E was unlikely to survive among its strong rivals if it did not explore and integrate channels well to enhance its competitive edge. Thus, facing huge pressure from competitors, the senior management of Firm E focused on the potential long-term benefits and appeared to be less concerned with short-term spending on expanding and fostering channel integration. Management was also more willing to adopt changes in business models. Resistance to change and the tendency to maintain the status quo were mitigated. Inter-channel competition for sales and resources among channels was also softened. Similarly, Firm I had been facing considerable difficulty attracting new customers in the previous few years because the young generation was under the impression that gold jewelry was unfashionable. Thus, Firm I faced less difficulty in integrating its online and offline channels.

In contrast, those firms that were well established and had little external competition remained in the less integrated group. They had no urge to make big changes in their business models. For example, Firm A and Firm B adopted a defender strategy, and their senior management was not highly engaged in channel integration initiatives. Based on the findings, we propose the following:

P2. A retail business that is under more external competitive pressure tends to integrate its offline channels with its online channels.

Figure 2 shows our proposed theoretical framework, which is composed of the operational challenges among channels and the two antecedents of these challenges. The framework indicates the two propositions made in the first part of the study.

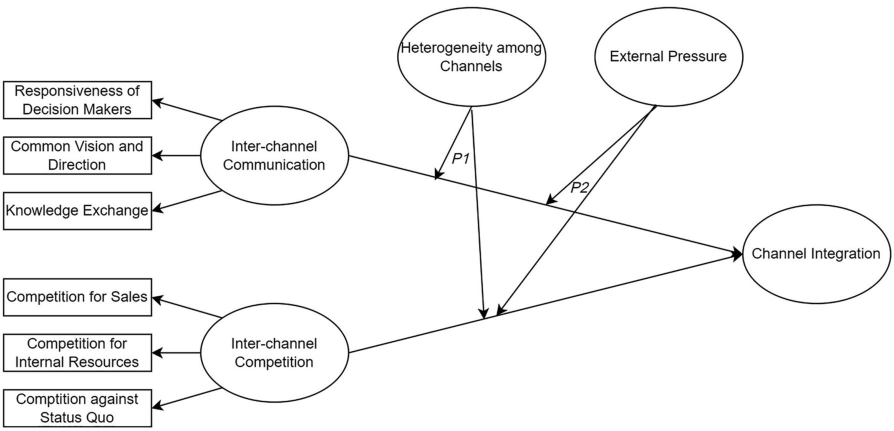


Figure 2. The theoretical framework of proposition (1) and proposition (2)

Source(s): Authors' own work

6. Findings from the second part of the study

The findings of the first part indicate that the heterogeneity among channels in business operation and external competitive pressure help drive a firm's channel integration. During the COVID-19 pandemic, offline businesses faced huge pressure from a sharp reduction of customer numbers at offline stores. Against this backdrop, we conducted multiple interviews with informants from three cosmetics and skincare firms for a duration of roughly one and a half years with the aim of finding indicative evidence to support or negate the propositions made in the first part of the study.

6.1 Responses of the firms

6.1.1 Firm J. The revenue of the physical stores or consignments of Firm J was slashed due to the COVID-19 pandemic. Thus, Firm J was motivated to expand its online channels in response to the changed consumer behavior and purchasing habits. Firm J spent more resources on promoting itself via social media, such as Facebook, YouTube and Instagram. Micro-celebrities were also employed to stimulate online sales targeting those who had been used to buying their products in Taiwan before the COVID-19 pandemic.

Firm J's social media promotion was not limited to traditional functions, such as image sharing with standard text description. It expanded to incorporate live streaming, video sharing, social networking, games and call-for-action activities such as sample distribution via these leading social media channels. Customers who were in lockdown could buy online no matter where they were at a discounted price to offset the postage fee for small purchases. Free delivery was offered for bulk purchases that exceeded or were equal to a specified amount. Customers could also choose to pick up their orders at physical stores.

6.1.2 Firm K. Since 2018 before the pandemic, Firm K had increased its spending on digital marketing with an aim to develop an effective and scalable micro-celebrity engagement strategy that would align with their expansion and revenue growth on online channels. Due to the COVID-19 pandemic, Firm K further doubled its spending on recruiting more online influencers to promote its skincare products. Many of these influencers were unemployed tour guides or flight attendants who were only available to take these promotion jobs after the outbreak of the COVID-19 pandemic.

Due to reduced customer flow to brick-and-mortar stores under the influence of social distancing policies, Firm K devoted more resources to drive retail customers to online platforms. Frontline promoters who were stationed at 70 health and beauty stores and consignments were urged to introduce the firm's online platform to their customers. They were also asked to invite customers to leave personal contact information, such as email addresses or social media contact information (e.g. WeChat and Facebook) for future promotion purposes. The online channels of Firm K would then send online messages to these potential customers promoting their products or special offers online.

Moreover, Firm K established its first online store on several shopping platforms in mainland China, such as Tmall and Alibaba, to target mainland customers who could not easily come to Hong Kong to shop because of the pandemic. These online platforms in China provided vendors with the option to use their online platforms to handle payment, logistics and delivery processes.

6.1.3 Firm L. Since 2015, Firm L was extremely proactive in establishing new channels and integrating its channels with the adoption of new technologies. The firm had started developing its personalized beauty mobile application two years before the pandemic, and the platform turned out to be extremely useful for combating some of the adverse impacts of social distancing policies. Specifically, many online bookings were made via the mobile application during the pandemic.

Two years after the outbreak of the COVID-19 pandemic, Firm L had demonstrated itself as a strong believer in the potential of emerging technologies. In 2019, it established a medical aesthetic platform, where customers could do everything online from purchasing to making appointments with the use of big data technologies. In late 2020, the pandemic had arrived and brought to the world a new normal—a new AI-empowered online doctor consultation platform incorporating a mobile app was launched that allowed customers to conveniently consult their doctors via video calls to receive remote consultations.

6.2 Supporting evidence

6.2.1 Inter-channel communication. The significant drop in sales due to the unprecedented pandemic had lasted for over two years, which endangered the survival of many retail firms. Under the shadow of the pandemic, the competitive climate in the cosmetics and skincare industry encouraged cooperation between online and offline channels to achieve a common goal: to survive the pandemic.

> "Frontline staff at brick-and-mortar stores had been asked to collect information on customers' social media and instant-messaging accounts before the COVID-19 pandemic. However, those staff just gave us the cold shoulder. They are now more cooperative in supporting online sales as they witness the significant decrease in traffic and sales. They are more willing to grasp any opportunities that can help increase sales, no matter whether it is online or offline, *for the survival of the firm.*" – Marketing Manager of Firm K (October 2020)

> "Promoters are now more willing to assist offline customers to register as online members of our official social media channels. The customers will receive timely promotion messages. Thanks to the promoters' hard work, the total number of new registrations after the outbreak of the COVID-19 pandemic is 5 times more than the total registration before the outbreak." – Marketing Manager of Firm K (February 2021)

We also observed that the frontline workers were more willing to transfer tacit knowledge to the online team after the outbreak of the COVID-19 pandemic. The workers tended to demonstrate their values in the firms to keep their jobs.

> Under the threat of being sacked due to poor offline business, the frontline staff are now *more willing to share their experience* and even take the opportunity to showcase their ability to cope with the new business models. They seem to be very eager to demonstrate their importance and values in the firm. – Marketing Manager of Firm K (October 2020)

Facing external pressure, management appeared to have a stronger acceptance of change. We observed that management recognized the importance of channel integration and tended to respond timely to the changes in the online market due to the pandemic.

> In the monthly management meeting, we now have to review our online marketing strategy to *respond to the online market in a timely manner.* – Business Development Director of Firm J (August 2020)

6.2.2 Inter-channel competition. There was less competition for resources and sales numbers among channels under the influence of increased external competition.

> I am not surprised that the head of promoters did *not say anything about the reallocation of the budget* from printing leaflets to online promotion during the management meeting. Fewer customers visited the stores, and the promoters had fewer opportunities to distribute those leaflets. They had to rely on online platforms to reach their customers. – Marketing Manager of Firm K (February 2021)

The establishment in the firms recognized that the business environment had changed. The resistance of longstanding channels to changes in business models was softened.

> Our boss eventually sees the huge potential of driving customers to online channels. Before the COVID-19 pandemic, they (the senior management) assumed that the online team should just be responsible for promotion and marketing. They paid little attention to the online customer experience. Now they *keep saying both channels are equally important*. – Business Development Director of Firm J (August 2020)

> A review on the *longstanding commission and incentive scheme* of online and offline sales has been conducted to avoid the lukewarm attitude of offline shop sales staff toward online sales after the outbreak. – Digital Marketing Manager of Firm L (March 2021)

6.3 Conflicting evidence

Although the initial plan to integrate the social media accounts of customers for promotion and marketing (at the pre-purchase stage) to the offline stores for sales and products and service delivery (at the purchase and post–purchase stages) went smoothly, the follow-up integration that drove customers from the social media platforms to Firm K's own online shopping platform faced immense resistance from the frontline promoters at stores.

> During the management meeting, the sales managers and the head of the promoters both complained about the new plan to drive online customers to our online shopping platform. They argued that offline face-to-face contact with our customers was the only way to keep them loyal. This was how we succeeded in the past. – Marketing Manager of Firm K (August 2021)

> The head of promoters complained to our boss that the online marketing team did a poor job of maintaining their loyal customers online. She said that those customers now get used to online purchase environments, but the online team did not maintain good relationships with them so as to keep them loyal to our brand. She insisted that her promoters would no longer invite offline customers to connect their social media accounts to our firm's official accounts. – Marketing Manager of Firm K (December 2021)

6.4 Discussion: why halfway through channel integration?

In the first part of the study, we found that inter-channel competition played a more influential role in propelling channel integration at the latter stage. We also found that heterogeneity among channels and external competitive pressure are two antecedents of the operational challenges of channel integration. In the second part of the study, we found both supporting and conflicting evidence of our findings in the first part. In the face of the external pressure exerted by the COVID-19 pandemic, all interviewed firms succeeded in advancing channel integration, albeit to different extents.

The heterogeneity among channels is multi-faceted, and the effect of one specific dimension of heterogeneity on channel integration changes during the process of channel integration. A specific dimension may facilitate channel integration at the initial stage, but the same dimension may hinder channel integration at a latter stage. From the perspective of experience orientation, the frontline employees of Firm K were strong believers of face-to-face, intensive communication with their customers for eliciting strong customer loyalty and retention. At the initial stage of channel integration, because of both the external pressure and the frontline staff's confidence in the offline "experience-oriented" approach of doing business, the frontline staff were not concerned about integration with the social media accounts of customers at the pre-purchase stage. Yet the frontline staff strongly objected to the integration of the social media accounts to Firm K's online shopping platform. They claimed that the seamless movement from the online social media accounts at the pre-purchase stage to the online shopping platform for orders and home delivery at the purchase and post–purchase stages skipped the offline channels. The store promoters might then have fewer opportunities to interact with the customers. Lack of interaction with customers would result in a substantial drop in customer loyalty and retention.

It is noteworthy that the frontline promoters did not object to the integration from the social media accounts at the pre-purchase stage to shopping platforms in mainland China for orders and home delivery at the purchase and post–purchase stages respectively. We note that these shopping platforms in mainland China only served customers who stayed in mainland China. Before the pandemic, these mainland customers usually made bulk purchases for discounts at stores and subsequently re-sold them in mainland China. The promoters of Firm K seldom engaged in social communication with these customers.

We propose that the frontline staff tended to preserve their "experience orientation" comparative advantage, a specific dimension of heterogeneity of offline channels against online channels, for orders and the delivery of services and products at the purchase and post–purchase stages, against online channels. They were therefore strongly opposed to the integration that possibly leads to the loss of existing customers whose loyalty is believed to be found in face-to-face interaction. The strong resistance did not emerge at the initial stage of channel integration, as the initial integration left the frontline staff intact to focus on the face-to-face "experience-oriented" tasks that gave them a comparative advantage.

As for integration with those shopping platforms in mainland China, the integration would largely result in loss of mainland customers at stores, yet the frontline staff were less concerned with this loss, since they did not develop comparative advantages by serving this type of customer in the first place. Thus, even though the mainland customers would be expected to physically return to Hong Kong after the pandemic, the frontline staff did not strongly object to the integration. We advocate that it is the tendency to preserve the values generated from that dimension of heterogeneity to a firm's business operation that generates resistance against channel integration at the latter stage.

The experience of Firm J also complements our idea. Firm J sold standardized skincare products imported from Taiwan. Before the COVID-19 pandemic, its frontline staff were not required to proactively engage in selling products to customers at stores. Only one or two staff were at the stores, mainly working as cashiers. Thus, the heterogeneity of offline channels against online channels is not the main reason that Firm J adopted channel integration.

At the beginning of the COVID-19 pandemic, there was no serious planning on the integration of Firm J's online and offline channels. External pressure intensified when there were no signs of an end to the pandemic, and the integration of online and offline channels was no longer an option but the only way out when all competitors were trying to shift more resources to online channels.

> We simply want to provide our customers with *another option for ordering our products* during the pandemic. Not all are so scared of the COVID-19 pandemic. They are welcome to come to our stores. They can pick up their orders at stores, or we can also send the orders to their specified addresses. It is up to them. We put a QR-code sticker next to the cashier counters, and customers can register as our online members by scanning the QR-codes. – Business Development Director of Firm J (August 2021)

Hence, whereas Firm J's channels were rather separate before the pandemic, its integration was better than that of Firm K roughly two years after the outbreak of the pandemic. The offline team of Firm J was not cognitively attached to the offline channels' features of experience orientation. Firm J therefore successfully adopted a relatively thorough integration between its brick-and-mortar stores and its online stores.

The experience of Firm L provides us with further insights. Firm L implemented channel integration much better than Firm K. We identified several possible reasons for this. First, Firm L launched its integration of some mobile applications for online marketing with its offline store in 2015. Similar to Firm K at the initial stage of channel integration, the frontline staff of Firm L did not complain about such integration, as the staff were assigned to tasks which offered them a comparative advantage. The mobile marketing team focused on reaching a large population, whereas the offline team was responsible for handing orders and transactions and delivering products at stores. During the pandemic, Firm L seized the chance to launch the integration of online marketing channels at the pre-purchase stage with online channels for orders (e.g. its online shopping platform with the adoption of big data) at the purchase stage. Influenced by the external pressure of the COVID-19 pandemic, the frontline staff did not raise strong objections to the integration. We suspect that the government promotion of using electronic payments instead of cash for better hygiene was also one reason that the frontline staff were willing to accept the integration during the pandemic. Apparently, they believed that they were at a disadvantage when it came to handling orders in comparison to online channels.

Furthermore, in contrast to Firm K, Firm L did not establish seamless movement from those marketing mobile applications to its online shopping platform for existing customers who had already downloaded the mobile apps. In addition, the integration did not rely on the frontline staff's promotion of the shopping platform to their customers at stores.

> "I did not feel any conflicts at that time (about integrating customers' social media accounts to its big-data-based shopping platforms). Actually, the integration did not require the offline staff's referral to their customers. The online platform mainly targets the mass online market." – Digital Marketing Manager of Firm L (December 2021)

In comparison to Firm K, little effort had to be exerted on inter-communication issues by Firm L. In particular, the longstanding teams continued to enjoy their comparative advantages at serving their old customers. The establishment of a shopping platform appeared to target new online customers who had their orders handled by the platform. We consider the difference in market segments as another dimension of heterogeneity among channels that enhanced channel integration.

Based on our findings in the second part, we propose the following:

P3. A specific dimension of heterogeneity of one channel against other channels tends to enhance initial channel integration, but the same dimension tends to hinder the latter stage of channel integration.

From the perspective of interdepartmental integration, we define the initial stage of channel integration as the stage when channels are assigned to focus on tasks that enable them to enjoy comparative advantages, e.g. new promotion to customers via mobile apps and frontline sales teams engaging customers at stores, along the customer journey. The latter stage of channel integration refers to the stage when channels are required to work on similar tasks during the customer journey. For example, mobile apps use iBeacon and send push notifications to customers when they are at stores to remind them that product purchase is available on apps, while frontline employees are selling experience-oriented goods to the customers. Figures 3 and 4 present the theoretical frameworks that indicate proposition (3) at the initial and latter stages of channel integration, respectively. The dynamic effect of the individual dimensions of heterogeneity among channels along the channel integration process is shown.

6.5 Discussion: ways toward more integrated channels

When retail firms attempt to integrate separate online and offline channels, many of them tend to preserve the offline channels' heterogeneity of experience orientation against its online channels at the purchase and post–purchase stages of the customer journey. This

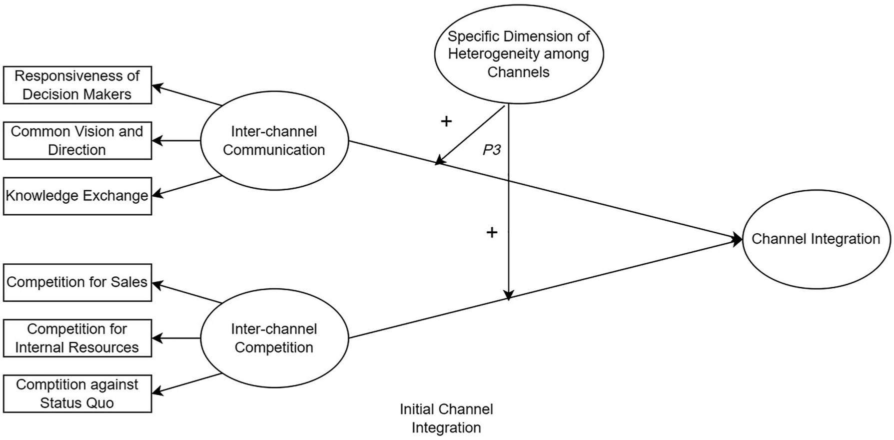


Figure 3.
The theoretical framework of proposition (3) at the initial stage of channel integration

Source(s): Authors' own work

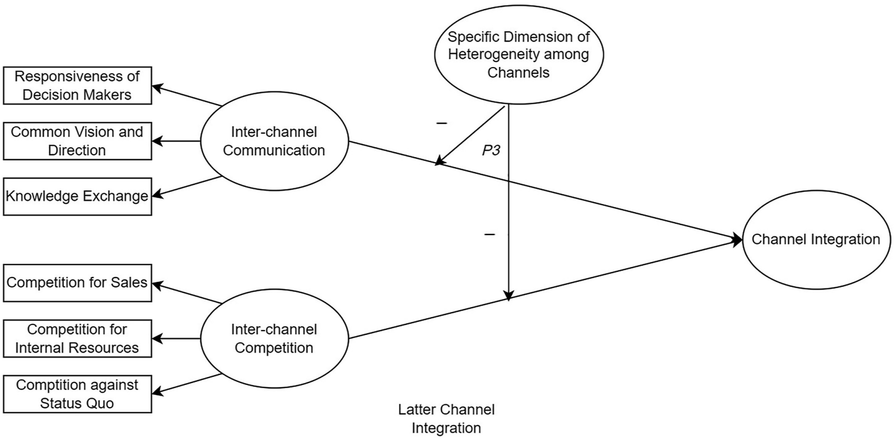


Figure 4.
The theoretical framework of proposition (3) at the latter stage of channel integration

Source(s): Authors' own work

tendency is conducive to initial channel integration, as offline channels can focus on face-to-face interaction with customers and delivery of experience-oriented services and products. Online channels can focus on reaching more customers at relatively low costs by presenting rich information on their products/services via the internet. Both channels work on tasks that give them comparative advantages. The stronger the experience orientation the offline channels possess, the larger the values that can be generated from offline channels working on experience-oriented tasks along the customer journey.

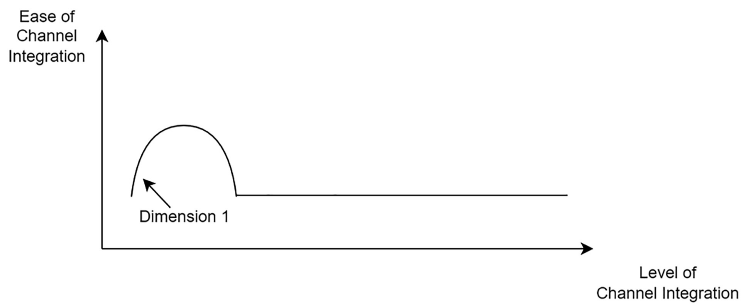
However, the effect of the offline channels' comparative advantage of experience orientation against online channels changes when channel integration advances. Customers start to be able to move across channels to create a seamless shopping journey between online and offline channels, and some will be diverted from offline channels to online channels at the purchase and post–purchase stages. The values generated from offline channels working on experience-oriented tasks at the purchase and post–purchase stages therefore reduce, and employees of offline channels will tend to oppose the advancement of channel integration. In order to advance channel integration, we suggest that from time to time other dimensions of heterogeneity among channels be introduced to employees who run partially integrated channels. The employees will then interpret their comparative advantage against those of a different dimension. For example, managers can persuade offline teams at the purchase stage that online channels can help reduce the cashiers' workload or even promote better hygiene in the midst of the pandemic.

The dimensions, including experience-orientation, online ordering and information exchange, are relatively inherent characteristics of channels. A controllable dimension of heterogeneity can be founded on differentiation of products/services offered. For example, Firm I sold some modern jewelry exclusively via online channels. This arrangement mitigates competition for sales among channels at the purchase stage. Employees at different channels can develop their comparative advantages in selling different products.

Heterogeneity can also be founded on locations of market segments. For example, Firm K faced little difficulty in implementing integration between its online social media accounts and shopping platforms in mainland China, since the frontline staff did not consider those mainland customers to be their main target customers. The staff did not develop strong skills in serving this type of customer in the first place. On the other hand, the shopping platforms in mainland China had developed a distinctive competitive advantage in targeting the Chinese market by helping vendors to handle payment, logistics and delivery processes in China.

By identifying a bundle of different dimensions of heterogeneity among channels, managers can introduce and emphasize suitable dimensions at the stage of partially integrated channels to advance channel integration incrementally. Figures 5 and 6 demonstrate how the introduction of more dimensions of heterogeneity among channels can enhance channel integration. The dynamic effect of a specific dimension on channel integration can be represented as an inverted U-shape curve in the graph. As channel integration proceeds, one channel can focus on tasks for which it enjoys comparative advantages. The channel members' strong tendency to work on such tasks leads to an increased ease of channel integration. Yet, as the integration proceeds, more channels will work on similar tasks of the channel's advantaged tasks. Given that the channel's members will tend to preserve their comparative advantages in the business operation, they will be reluctant to collaborate with other members of other channels. This leads to a decrease in the ease of channel integration (see Figure 5).

However, if managers introduce another dimension of heterogeneity to their channel workers on the brink of more channels working on similar tasks, the ease of channel



Source(s): Authors' own work

Figure 5. The relationship between the ease of channel integration and the level of channel integration for a single dimension of heterogeneity

integration can be maintained at a higher level (see Figure 6). Channel workers adopt another perspective through which to view channel integration. They may be more willing to accept channel integration, since they consider that another channel also enjoys their comparative advantage when working on similar tasks. Integration becomes easier when more dimensions of heterogeneity among channels are introduced. The challenges of channel integration, namely inter-channel communication and inter-channel competition, are thus mitigated.

7. Implications

7.1 Theoretical implications

In this study, we adopt both the customer-journey-oriented perspective and the interdepartmental perspective to understand channel integration. The former perspective draws on channel management literature, such as that of Lee *et al.* (2022), Neslin *et al.* (2006) and Verhoef *et al.* (2015), to understand the maturity of channel integration among firms on the basis of customers' seamless movement across channels. The latter perspective of interdepartmental channel integration interprets internal operation among teams of various channels through two dimensions, namely, interaction and collaboration (Kahn and Mentzer, 1998; Verhoef and Pennings, 2012). This perspective analyzes how channels work together for the shared goal of channel integration. The changing importance of the challenges of interdepartmental integration and their antecedents during the intermediate process of channel integration has been overlooked in previous studies. This study aimed to address this research gap.

In the first part, we identified two groups of challenges toward channel integration: inter-channel communication and inter-channel competition. Not all challenges are new to us. For example, the competition for sales and internal resources was mentioned in the study of Kim and Chun (2018) and Neslin *et al.* (2006). Communication problems were also mentioned by Hansen and Sia (2015). Nevertheless, in contrast to the previous literature, we find that inter-channel competition has a stronger influence than inter-channel communication during the latter stage of channel integration. Thus, whereas initial channel integration can be partially achieved by resolving inter-channel communication, more integrated channels require additional effort to reduce inter-channel competition. Good inter-channel communication is a necessary, but not sufficient, condition for full channel integration. We also identified two antecedents of these challenges, namely, heterogeneity among channels and external pressure, both of which affect inter-channel communication and competition.

In the second part of the study, we found evidence to support that heterogeneity and external pressure as the antecedents of the challenges of channel integration. However, we

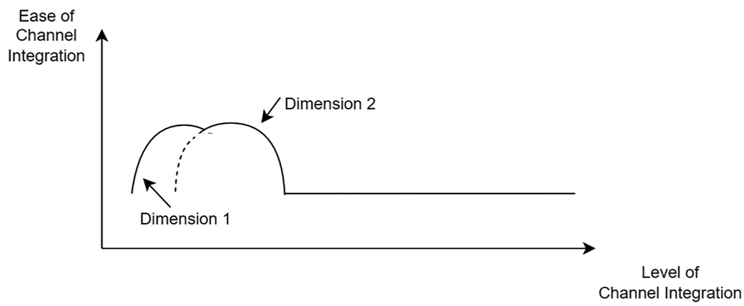


Figure 6. The relationship between ease of channel integration and level of channel integration at multiple dimensions of heterogeneity

Source(s): Authors' own work

also identified some conflicting evidence. We noted that a specific dimension of the heterogeneity, e.g. experience orientation of offline channels against online channels, fosters initial channel integration but hinders the integration at the latter stage. At the latter stage, the channels tended to preserve their comparative advantages in business operation, and therefore they had strong resistance to further integration, which might have resulted in a reduction of the values generated by their experience-oriented tasks in the business operation.

Some recent omni-channel studies have advocated that distance between stores and customers' living places is a dominating factor of channel integration success. Luo *et al.* (2020) suggested that customers who stay near a physical store of a retailer that adopts offline-to-online marketing tend to spend more offline. However, those distant consumers will tend to spend less at physical branches. Akturk and Ketzenberg (2022) also found that distance between store shoppers and physical stores affects the intensity of impacts of competitors' launch of a buy-online-pick-up-in-store service on a firm's sales. Li *et al.* (2018) identified two factors, namely, travel cost and store density, which affect consumer demand for Groupon deals. Nevertheless, these studies focused on a specific type of integration, i.e. from offline at the pre-sales and sales stages to online at the post-sales stage (Luo *et al.*, 2020) and from online at the pre-sales and sales stage to offline at the post-sales stage (Akturk and Ketzenberg, 2022) and Li *et al.* (2018). They did not examine the intermediate process of channel integration. The density of stores or the distance between stores and customers are dimensions of comparative advantages. We propose that their impacts on channel integration may reverse during the intermediate process of channel integration.

Our findings show consistency with some previous studies that examined the intermediate process of channel integration. In line with our findings, the first and second stages of channel integration proposed by Cao and Li (2015) did not involve the purchase stage where competition for sales and resources can be easily triggered. The first two stages mainly worked on integrating marketing activities, which pertain more to inter-channel communication. According to Cao and Li (2015), only at the latter stages of channel integration do firms need to deal with integration related to purchase and transactions whose processes involve considerable inter-channel competition.

Based on their two-year longitudinal study of a French online eyewear retailer, Picot-Coupey *et al.* (2016) advocated that the adoption of channel integration requires a great deal of organizational learning and trial and error. They suggested that the learning requires "the consideration of flexible replication as the appropriate lens of analysis, which represents a way to achieve synchronization across channels and touch points" (Picot-Coupey *et al.*, 2016, p. 363). This "lens of analysis" apparently referred to adopting different dimensions of heterogeneity among channels to interpret channel integration.

7.2 Managerial implications

Business managers of retail firms tend to be cognitively attached to preserving the experience orientation of the offline channels during the initial stage of channel integration. In view of the promising potential of omni-channel commerce, however, managers should not simply reap the benefits of partial channel integration. To promote channel integration, managers need to extend their preliminary set of dimensions of heterogeneity among channels. Next, we present a number of directions toward more integrated channels.

7.2.1 New channels: emerging technologies. Emerging technologies have enhanced the capability of online channels to handle tasks that are inheritably attached to offline channels. For example, Firm L took advantage of video conferencing technology to enable interactive, intense communication between its medical advisors and customers. The use of such technology helped avoid the emergence of competition for sales and resources among channels, as the technology enabled the same group of medical advisors to provide consultation services via both online and offline platforms. Some virtual reality technologies have also proven to be helpful concerning this aspect (Hilken *et al.*, 2018). Offline channels' comparative advantages of experience orientation can be reduced by adopting virtual reality technologies or teleconference tools so that offline workers may be less reluctant toward channel integration.

Other new technologies can also enrich the characteristics of offline channels and enhance integration. Unmanned stores, one innovative concept based on RFID technologies, create a new type of offline channel. Unlike the typical brick-and-mortar stores, these unmanned stores do not enjoy the same level of comparative advantages of providing experience-oriented services or products at the purchase and post–purchase stages. Nevertheless, the low demand on human resources to support the operation of unmanned stores creates a new comparative advantage of serving offline customers at a low operating cost (OPEX) in the long run, regardless of capital expenditure.

7.2.2 New dimensions of heterogeneity: market segmentation. Whereas the characteristics of channels are rather inborn, management can identify dimensions of heterogeneity among channels through market segmentation. Channels can target different market segments with different products, promotions, prices and places. Firm I demonstrated how channel integration could be enhanced by offering certain jewelry that was sold only through online platforms. Firm K also showed that local employees were less resistant to the introduction of a new channel that focused on the China market, since the employees believed that they had comparative advantages of serving local shoppers but not at serving mainland customers. Specifically, we should pay attention to pathways taken by different market segments across various channels. At each stage of the customer journey, different channels should focus on serving designated market segments. As a result, management will face less resistance to channel integration.

7.2.3 When to introduce new dimensions of heterogeneity: action windows. External pressure mitigates internal competition and enhances internal coordination. We advocate that less effort is required to implement channel integration when a firm faces a surge of external pressure. Both improvement of inter-channel communication and mitigation of inter-channel competition can be more easily achieved.

A surge of external pressure can be event-triggered. Managers who support channel integration should seize the opportunity to implement further channel integration. The occurrence of the COVID-19 pandemic was one such event, when managers were able to launch the implementation of full channel integration at a lower cost and with less resistance. Managers should seize these action windows to advance channel integration.

8. Limitations and conclusion

8.1 Limitations

This study has a few limitations. Firstly, it focuses on the pair of generalized online and offline channels. We did not look into pairs within the same type of channels or pairs between two specific channels. Examination of these pairs would have provided us with further practical insights. Secondly, unlike the single focal firm in Picot-Coupey *et al.* (2016), which started its business online, all of the firms we interviewed had started their brick-and-mortar businesses before they established online channels in recent years. Our findings are limited to those firms that started their offline businesses before the online ones. Thirdly, interviews with informants of the nine firms in the first part of the study may not have enabled the discovery of all the potential insightful information of all the firms compared to the insights that a single, in-depth case study for one firm might yield. Nevertheless, the larger number of interviewed firms may help us draw more generalized implications from "multiple case experiments" (Eisenhardt and Graebner, 2007). In addition, the second part of the study, which involved a longitudinal examination of three firms for roughly one and a half years, should mitigate this limitation. Fourthly, the COVID-19 pandemic affected many aspects of our lives. Whereas the pandemic definitely exerted immense pressure on cosmetics and skincare firms, we should be aware of its uniqueness in comparison to other future events that exert external pressure on channel integration.

8.2 Conclusion and future research

In this paper, we identified the challenges of channel integration and their antecedents. Showing the changing influence of individual dimensions of heterogeneity among channels, we also explained why retail firms commonly get only halfway through channel integration with online channels. Moreover, we presented ways to advance channel integration. Future scholars may want to explore how to evaluate the heterogeneity of channels in a more quantitative way and investigate the influence of such a quantitative construct on channel integration. Exploring different pairs of specific channels might also be interesting.

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Appendix 1

1	The Fundamental Principle of the Hermeneutic Circle Human understanding is formed by iterating between consideration of the interdependent meaning of parts and the whole they constitute
2	The Principle of Contextualization Readers require a critical reflection of the historical and social background of the research setting so as to understand how the situation under examination emerged
3	The Principle of Interaction between the Researchers and the Subjects How the data were socially constructed during the qualitative data collection should be critically reflected to understanding the underlying meaning of the data
4	The Principle of Abstraction and Generalization Applying principle one and two to theoretical and general concepts that describe nature of human behavior so as to relating the idiographic details revealed by the data interpretation
5	The Principle of Dialogical Reasoning Be sensitive to actual findings that are contradictory to the theoretical preconceptions and result in cycles of revision
6	The Principle of Multiple Interpretations Be sensitive to different interpretations about similar events among subjects
7	The Principle of Suspicion Be sensitive to unintended biases and dissertations revealed by the subjects' narratives

Source(s): Adapted from Klein and Myers (1999)

Table A1. Seven principles for interpretive field research

Appendix 2

Coding processes	Description
Open coding	Data collected are compared and contrasted for differences and similarities. No prior assumption is made before the coding. Data are conceptually labeled and grouped into categories and subcategories
Axial coding	Categories and subcategories are related. Their relationships will be validated qualitatively with a review of the data collected. Concurrently, new concepts and categories may emerge during the process
Selective coding	Categories and relationships among them were further examined to discover distinctive core dimensions that capture the categories and the relationships

Source(s): Corbin and Strauss (1990)

Table A2. Description of coding processes

Appendix 3
Background of the firms

Firm A
Established in 1975, Firm A is a leading electrical appliances retailer with over 70 retail outlets in Hong Kong. It is a subsidiary of a multi-national corporation with more than 1,000 employees targeting consumers looking for home appliances.

In 2010s, Firm A started to engage in online marketing. Company YouTube channel and Facebook page were established in 2010 and 2011 respectively. In 2013, Firm A formed a digital marketing team. In the last few years, Firm A had placed more emphasis on online channels targeting the young generation who are familiar with making online purchase. It developed its own mobile app, expanded its online retail channel, and launched an O2O campaign. Customers could pick up their online orders at stores.

Firm B

Firm B is a multinational mobile and broadband service provider targeting the mass market with operations in Hong Kong and overseas covering Austria, Denmark, Indonesia and the United Kingdom. It is a subsidiary of a blue-chip corporation listed in Hong Kong.

Firm B has engaged in online marketing as early as 2010s. Its Facebook page was created in 2010 and the corporate YouTube channel was established in 2014. It expanded its online retail channel in 2017. To explore the O2O model, Firm B launched vending machines accepting mobile payment across Hong Kong selling tangible products such as SIM cards.

Firm C

Firm C is an aesthetic medical center established in 2016 targeting female above 30 years old with strong spending power. Their business model is a typical O2O, driving online customers to offline medical cosmetic center. KOL marketing and YouTube marketing have been employed. In late 2018, Firm C invited a celebrity singer to be its spokesperson. The firm was exploring the possibility of selling skin care products at the centers.

Firm D

Firm D is a luxury male fashion brand established in France in 1880s targeting middle-age, high-income male. It was acquired by a Hong Kong listed company in 2010.

Firm D opened its first retail shop in Hong Kong in the same year after acquisition. In 2019, it had expanded to 5 retail stores located in Hong Kong. Other than ready-to-wear clothes, it provided tailor made services at retail stores. It expanded its online retail channel in 2016. In recent years, it has also employed e-commerce platforms, such as JD.com and Tmall, to sell their products in China.

Firm E

Firm E is an online shopping platform selling a large variety of products targeting households who are willing to make online purchase. Before running the platform, Firm E was a telecommunication service provider. The chairman of Firm E was a rather high-profile figure in Hong Kong. The firm sold its telecommunication business, and subsequently started its e-commerce business in 2014. In 2016, it opened its first store on Hong Kong Island. In 2017, it acquired a renowned collective buying platform's business in Hong Kong region.

Firm F

Firm F specializes in kitchen-ware manufacturing and is a kitchen-ware retailer in Hong Kong with more than 40 retail stores. It was established in 1950s targeting mass market. It created its Facebook page in 2013 and its YouTube channel two years afterward. Online channel had been set up in 2018. It planned to launch its O2O campaigns to engage the younger population in the coming years. Firm F focused mainly on driving the online population to the offline stores to make purchases.

Firm G

Firm G is a manufacturer, a retailer as well as an exporter of electronic appliances targeting the low-income population. It was established in 1988 and opened its first retail shop in 2010. It had more than 30 retail stores in Hong Kong. Products were sold through various platforms, including its corporate website, as well as e-commerce platforms such as JD.com and Amazon. Firm G's customers could pick up online purchases at stores.

Firm H

Firm H is an international cosmetic brand with around 30 shops in Hong Kong with more than 3,000 stores covering over 90 countries worldwide. Each local team was responsible for its local retail and e-commerce businesses. This cosmetic brand targeted young female customers who love natural and organic products. Firm H created its Facebook page in 2011 and its YouTube channel in 2013. It expanded its e-commerce business in 2017. The customers could pick up their online orders at stores.

Firm I

Firm is a jewelry brand and has more than 60 retail stores in Hong Kong targeting high-spending power local consumers and tourists from mainland China. In 2011, it expanded its e-commerce business and created its Facebook page. One year later, it created its YouTube channel. Besides online purchase on its corporate website, Firm I sold its products through e-commerce platforms such as Tmall. Customers could purchase exclusive products on Firm I's website. They could pick up the ordered products at Firm I's stores.

Firm J

Firm J is a famous Taiwan skincare brand with 4 shops in Hong Kong targeting young female customers who love natural and organic skincare products. Firm J created its Facebook page in 2018 and started to expand online sales via the largest local e-commerce platform since 2019.

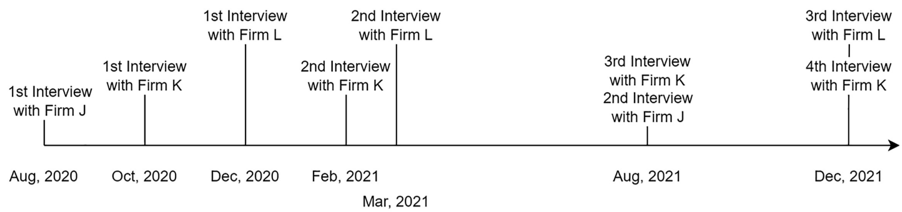
Firm K

Firm K is a local skincare brand with around 70 consignments at a leading health and beauty retailer in Hong Kong targeting young female customers who love natural and organic skincare products. Firm K was established in 2004 and created its Facebook page and YouTube channel since 2012 and started to develop its online sales platform via its corporate website since 2012. In the past few years, Firm K started to explore online marketing channels such as Tmall, JD.com targeting China market.

Firm L

Firm L is an industry leader in medical aesthetic established in 1997. It has 28 medical beauty centers and concept stores in prime business locations in Hong Kong and Shanghai. In 2014, the opening of its intelligent medical aesthetic hub in Mongkok, Hong Kong initiated the full connection of the firm's online and other offline platforms and making good use of big data to explore further online platforms enhancement. In 2017, it launched a personalized mobile application that provided skin snap AI skin analysis. The mobile application also provided online booking services.

Appendix 4



Source(s): Authors' own work

Figure A1. Timeline of interviews in the second part of the study

Appendix 5

Table A3. Evaluation of firms' channel integration

	Inter-channel communication			Inter-channel competition		
	Responsiveness of decision makers	Common vision and direction	Knowledge exchange	Competition for sales	Competition for internal resources	Competition against status quo
Firm A	Slow	Limited	Weak	Strong	Intense	Strong
Firm B	Slow	Limited	Weak	Medium	Intense	Strong
Firm C	Fast	Widespread	Strong	No	Medium	Low
Firm D	Slow	Limited	Weak	Strong	Intense	Strong
Firm E	Fast	Widespread	Strong	No	Medium	Low
Firm F	Fast	Widespread	Strong	Low	Medium	Medium
Firm G	Slow	Widespread	Weak	Strong	Intense	Strong
Firm H	Slow	Limited	Weak	Medium	Intense	Strong
Firm I	Fast	Widespread	Strong	Low	Low	Medium

Source(s): Authors' own work

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