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Customer Loyalty and Supply Chain Management

Business-to-Business Customer Loyalty Analysis

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relationship usually involves more than two or three individuals; all these people have different needs and backgrounds. The principle behind 'relationship marketing' is that the organisation should consciously strive to develop marketing strategies to maintain and strengthen customer loyalty (Reichheld, 1994). Conceptualising and analysing these marketing situations requires different research approaches that deal with purchasing complexity and customer prospect heterogeneity. In sum, it is a complex and heterogeneous business context. Second, in a B2B market, work experiences, production and engineering are essentials. Thus, companies that have a technical background but no business experience are less useful in professional development processes. Third, in a B2B context there is generally a lack of data availability; data for B2B contexts are rarer and more difficult to collect for scholars than are data for business-to-consumer (B2C) contexts. Thus, the domain of B2B research encompasses many open questions. Studying the B2B market could be useful for building theories related to different disciplines, but B2B research also faces heterogeneity in the units of analyses and thus can reveal different theoretical perspectives (Håkansson and Snehota, 1989; Reid and Plank, 2000; Gummesson and Polese, 2009; Vargo and Lusch, 2011). Early marketing was simply an application of economic theory, while business relationships were a combination of economic, organisational and social factors. Concepts like reciprocity, mutuality and trust have since acquired a new importance and they are closely connected to B2B research.

This view is clearly in contrast with the guidelines of economic theory, which focuses on the lowest production costs and maximum profits in the exchange. Economic theory researchers were primarily concerned with consumer markets, and the main goal was to connect consumers to society using, to begin with, economic theory, then later, social theory, and then organisational behaviour theory (Alderson and Cox, 1948; Alderson, 1965). Later, the line of reasoning changed slowly following the idea that customers are also important and could contribute to the creation of value. It was not until some years later that the first course in industrial marketing was developed at Harvard Business School by Ray Corey, who published *Industrial Marketing: Cases and Concepts* (Corey, 1962). Later Peter Drucker argued:

> What the customer thinks he or she is buying, what he or she considers value, is decisive – it determines what a business is, what it produces, and whether it will prosper . . . Customers are the foundation of a business and keep it in existence. To supply the wants and needs of a customer, society entrusts wealth-producing resources to the business enterprise.
>
> (1974 p. 57)

A notable contribution to research came from The Industrial Marketing and Purchasing Group, which was formed in the 1970s between five European research groups from France, Germany, Italy, Sweden and the UK. The approach was basically to see B2B marketing as an ongoing interaction between buyers and sellers; this approach is based on relationship marketing and implies the

buyers and sellers are dependent on each other and create value for both sides (Håkansson and Snehota, 1989; Snehota and Håkansson, 1995; Gadde, Håkansson and Persson, 2010; Cantù, Corsaro, Fiocca and Tunisini, 2013). Then, in the 1980s, many marketers moved from the term 'industrial' goods marketing to 'business' marketing and, finally, by the 1990s, 'business marketing' frequently displaced 'industrial marketing' and the label 'B2B marketing' became very popular (Hunt, 2013). In recent years, B2B marketing has become a decision-making activity directed at satisfying customers' needs and wants. Gradually moving towards B2B markets, it also required an analytical understanding of all members involved in the value chain.

Compared with B2C, B2B marketers focus on fewer and more varied customers, using more complex and typically oriented sales processes. The presence of a few powerful customers means that many common tools and data used in B2C are inappropriate for the B2B market. In addition, B2C transactions still occur through common channels; this is in opposition to B2B transactions, which are more private and direct. Thus, the key distinguishing feature of B2B is that the customer is an organisation rather than an individual customer, in contrast to consumer markets, which focus only on the relationship between the supplier and the final customer.

In sum, consumers, after all, care deeply about brands and are more readily influenced by advertising, media messages, special deals, coupons and word of mouth (WOM) through online or offline avenues, and they can switch from one brand to the next with little cost. Meanwhile, business purchase managers and supply managers conduct significant research, examine specifications, follow a formal buying or procurement process, experience high switching costs, and usually worry most about functionality, volumes and price (Lingqvist et al., 2015). Finally, in the B2B context, decision-makers buy with the ultimate goal of adding value at less cost to move the products from upstream of the value chain to downstream.

Supply chain management: a pillar for business-to-business marketing

Alderson and Martin (1965) stated that the key to maximising organisational wealth was to integrate the diffused transactional and transvectional demand and supply elements in the distribution channel to create value. A transvection is, in a sense, the outcome of a series of transactions beginning with raw materials and ending with a product at the consumer level. Alderson's transvection (1965) presages what is now referred to as 'supply chain management' (SCM), incorporating the theory of marketing (Hunt, 2013). According to Esper, Ellinger, Stank, Flint and Moon (2010), Alderson demonstrates how the flow of information and product alteration or transformation results in transvections, or an entire system of exchanges that are premises of the need of demand and supply management integration. Indeed, over the last 20 years there has been a significant directional change in both marketing practice and theory with regards

to the idea of relationship marketing – that is, establishing, developing and maintaining successful relational exchanges (Morgan and Hunt, 1994). Today, the relevance of relationships between customers and suppliers is extensively recognised in the business literature.

Interest in the supply chain concept has received considerable attention since the 1980s, especially since firms have realised that the market's evolution towards a reduction in lead time and more responsive supply would drive them into organisation isolation from the other members of the chain. SCM thus plays a key role in exploring such relationships across the supply chain.

However, even with great interest in the topic, there is no definitional consensus for SCM among scholars and practitioners. We view the supply chain as:

> The systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole.
>
> (Mentzer et al., 2001, p. 11)

The main idea is to consider supply chain as a flow in which the members have only the function to choose the physical flow of goods. New research and theories in addition to those concerning the typical members of a supply chain have considered other members who have a supportive and secondary role but who are equally important.

A relevant contribution comes from the network perspective used by Carter, Rogers and Choi (2015), which defines the supply chain as a set of nodes and links. A node represents a member of the chain with the ability to maximise its own profit while respecting the limits in which it operates. A link consists of the transactions between two nodes. Thus, the supply chain is a complex and dynamic system that is difficult to forecast and control. Each node in the supply chain manages its own resources to obtain a profit and coordinates its actions with the purpose of achieving visibility upstream towards its suppliers and downstream to its customers. However, as we have seen, other members can influence the performance of a specific node; beyond their visibility range, an agent is subject to the decisions of the other members and cannot exercise control over them. For every supply chain, the mechanism is the same: to analyse a single situation, we must refer to the focal company. The case of an individual agent and of the focal firm can differ from one another based on the typology of goods or the mode of transportation. However, the specific case is important to identify in order to analyse a supply chain and a point of reference. Each agent can be involved in a unique supply chain or in many. While Mentzer et al. (2001) analyse the complexity of supply chains, identifying numerous actors with increasing complexity, Carter et al. (2015), concentrate more on the nodes and links of the supply chain, where customers and suppliers often connected not as a linear chain but as a network. In particular, the model shown in
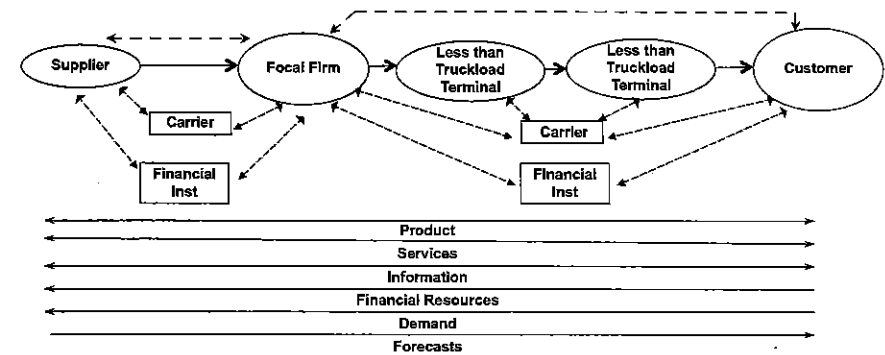
Figure 1.1 The physical and support supply chain as a network

Adapted from Carter et al. (2015)

Figure 1.1 illustrates the dynamics of carrier activity. The carrier is considered as either a physical or a support node, demonstrating a more complete framework of how value-adding activities are organised in a supply chain. In that case a product moves from the focal agent (node) through warehouse terminals to the focal agent's customer in the physical supply chain.

SCM coordinates business functions within and between organisations and their channel partners. SCM strives to provide goods and services that fulfil customer demand responsively, efficiently and sustainably. Further, it includes functions such as demand forecasting, purchasing or call sourcing, customer relationship management and logistics. Thus, supply chain perspectives reflect knowledge and operational capabilities through information coordination and collaboration across organisations throughout the service ecosystem. When supply chains are not integrated in the product, information and financial flow, or are not appropriately organised and managed, the results are inefficient and resources are wasted.

Thus, over recent years the increased interest in SCM can be summarised as:

- increasing consumer expectations of product quality and customer service coupled with local and regional preferences across multiple marketing channels;
- increased globalisation, which has created a geographical decomposition of the value chain, with the most common phenomena being global sourcing and offshoring;
- great environmental uncertainty resulting from the huge impact of technology and digitalisation, competition, different governmental rules and regulations, macro-economics, world geopolitical dynamics and rising levels of material scarcity for raw materials; and
- the trend towards reducing lead time and increasing services, which require closer relationships and coordination between the members of the supply chain, mainly in the era of e-commerce.

These dynamics will affect the efficiency (i.e., cost reduction) and the effectiveness (i.e., customer service) of supply chains designed to create time, place and form utility to improve the customers' commitment.

Additionally, we are in an era of global supply chains comprising a worldwide network of suppliers, manufacturers, warehouses, distribution centres and retailers through which raw materials are acquired, transformed and delivered to customers. Moreover, changing demographics, with middle-class growth in China, India and Vietnam, and expectations of higher growth for some countries in Africa, have led global companies to mine these new markets for growth and profitability. Nowadays 54% of the worldwide population lived in an urban area, which is expected to rise to over 66% by mid-century (United Nations, 2015); this will be a challenge for companies and third party logistics due to an increase in online shopping will require more urban logistics premises to fulfil late cut-off deliveries.

Today, supply chain managers must develop competencies that allow them to understand complexity, anticipate major changes and trends and adapt to those changes as needed.

Consequently, such a context leads companies in one country to depend on companies from other countries, either to supply material or to market their products. This strategy also renders organisations potentially less responsive, more dependent on long-term forecasts and vulnerable to the delay and change of demand. Globalisation has set up large systems of trading partners that span vast distances. Vertical integration, once commonplace, is now rare. While outsourcing has cost advantages, it also has a downside – lack of control and oversight; globalising the marketplace and the need of logistics service providers to render logistics services on an international scale requires intercultural management competencies. These are significant challenges for retaining customer loyalty.

However, the diverse framework shows a greater focus on supplier-customer dyads, where there are activities, actors and resources with an increasing interest in marketing research (Mele and Polese, 2011; Vargo and Lusch, 2011; Grönroos and Helle, 2012). This context also exists for supply chain research, where firms can benefit from long-term relationships leading to long-term customer retention (Ganesan, 1994; Terpend, Tyler, Krause and Handfield, 2008). Further, supply chain relationships can be a stable source of competitive advantage because of their ability to create barriers to competition (Golicic and Mentzer, 2006). Several studies emphasise the importance of building and maintaining relationships in business-to-business marketing (Lapierre, Filiatrault and Chebat, 1999; Jacob and Ulaga, 2008; Lapierre, Terpend et al., 2008). In a supplier-customer relationship, value facilitation can be regarded as a prerequisite or foundation for value creation and, thus, a reason for customers to seek a relationship with a supplier. The question now facing managers in supply chain dyads and triads has become 'what type of a relationship do I need to have with this supplier/buyer?' Relationship value in a B2B context is a dynamic process where the nature and characteristics of the value sought are constantly changing across different supply chain members.

Thus the advantages of an individual firm are often linked to the network of relationships in which the firm is embedded and where that firm is perceived to deliver value to the rest of the network. Understanding the value sought by other members in a supply chain network is critical because better alignment of objectives across companies can lead to competitive advantage and superior operational and financial performance. Indeed, loyalty is developed, integrated and coordinated along the supply chain members' activity nodes and links in the overall supply chain.

The effectiveness of the supply chain is measured when the customers decide where, what and how to buy a product. To do so, there is a need for strong integration of functions such as marketing, logistics, operations and purchasing within and across multiple firms (Frankel, Bolumole, Eltantawy, Paulraj and Gundlach, 2008; Matthyssens, Bocconcelli, Pagano and Quintens, 2016). Firms that effectively manage the supply chain combine functions, processes and activities across organisations, ultimately resulting in benefits such as value creation, increased efficiency and enhanced customer satisfaction (Lambert, García-Dastugue and Croxton, 2008; Stock, Boyer and Harmon, 2010; Kozlenkova, Hult, Lund, Mena and Kekec, 2015). Supply chain integration focuses also on inter-firm integration (i.e., a firm's relationships with its suppliers and its customers) as well as internal integration. This aspect is often referred to as 'cross-functional integration' and is usually dyadic in nature, referring to a process of interdepartmental interaction and collaboration in which multiple functions work together in a cooperative manner to arrive at mutually acceptable outcomes for their organisation. The integration achieves a superior supply chain performance that can also produce a competitive advantage to increase revenues and to control expenses and profit margins. Recently Lambert and Enz (2017) required more research to identify deficiencies in the capabilities of each function as well as in the customer and supplier networks in order to develop capabilities that support the implementation the management of the supply chain.

The collaborative programmes exist where supplier and customer share supply and demand forecasts and schedules to reduce demand variability. The purpose is to migrate them to a continuous replenishment flow model, which is a high-value model that generates higher levels of customer loyalty. Moreover, new fulfilment and supply chain strategies have emerged as companies have responded to the changing marketplace by developing alternative solutions (i.e., agile, responsiveness, lean). However, no one-size-fits-all approach exists and the supply chain strategy should be evaluated and tailored to specific company requirements. In addition, to enhance their competitiveness, many companies outsource some activities, which enables them to improve their operational efficiency, reduce costs, focus more on their core competencies and improve their innovation capabilities. Customers whose buying behaviour follows a regular, predictable pattern should be invited to participate in collaborative programmes.

Whereas logistics and SCM have traditionally referred to the physical flow connecting production with customers, more recent research in logistics aims at

2 Customer loyalty in the business-to-business context

Customer loyalty background

Business scholars have long proposed that firms with a good understanding of the sources of customer loyalty can gain market advantages (Wind, 1970; Palmatier, Scheer and Steenkamp, 2007) such as increased revenues, lower costs and increased profitability, to name a few (Dick and Basu, 1994; Gundlach, Achrol and Mentzer, 1995; Christopher, 2016). Loyalty is a central concept in the relationship marketing paradigm because customer retention contributes to lower customer acquisition costs and thus positively affects the firm's profitability and market share (Anderson, Fornell and Lehmann, 1994). Traditionally, customer loyalty has been defined as buyers' deeply held commitment to stick with a product, service, brand or organisation in the future, despite new opportunities or competitive situations that influence switching (Oliver, 1999). Morgan and Hunt suggest that 'loyalty [is] increasingly similar to our conceptualisation of commitment' (1994, p. 23). Thus, this dimension is like relationship commitment in buyer-seller interactions where customers have a permanent intent to maintain long-term relationships (Anderson and Weitz, 1992).

According to various scholars in the field of industrial marketing, customer loyalty has been studied as a relationship between customer and supplier (Dwyer, Schurr and Oh, 1987; Biong, 1993; Innis and La Londe, 1994; Bloemer and De Ruyter, 1999; Ellinger, Daugherty and Plair, 1999; Davis and Mentzer, 2006; Wallenburg, Cahill, Michael Knemeyer and Goldsby, 2011; Blocker, Flint, Myers and Slater, 2011; Watson, Beck, Henderson and Palmatier, 2015). As research progressed, scholars suggested that loyalty might be bi-dimensional, incorporating both attitudinal and behavioural loyalty (Day, 1969). Attitudinal loyalty represents a buyer's emotional or psychological commitment to a brand, provider or a supplier (Rauyruen and Miller, 2007; Cater and Cater, 2009), while behavioural loyalty captures a buyer's intention to repurchase from the same provider in the past, present or future (Stank, Goldsby and Vickery, 1999; Homburg and Giering, 2001; Hewett, Money and Sharma, 2002; Guenzi and Pelloni, 2004; Davis-Sramek, Mentzer and Stank, 2008). Subsequently, researchers adopted this two-dimensional view, often referred to as composite loyalty (Oliver, Rust and Varki, 1997; Dick and Basu, 1994; Blocker et al., 2011). Some

scholars exploring business relationships test for both affective commitment (attitudinal) and repurchase intention constructs, which coincide with the two loyalty dimensions mentioned above (Gundlach et al., 1995; Verhoef, 2003; Lam, Shankar, Erramilli and Murthy, 2004; Blocker et al., 2011). Attitudinal loyalty has been extensively explored compared with behavioural loyalty, particularly in relation to its antecedents. In contrast, when considering the outcomes of loyalty as WOM or financial performance, behavioural loyalty affects performance more compared with attitudinal loyalty.

In summary, loyalty has been defined in terms of repeat purchasing, long-term commitment, intention to continue the relationship and likelihood of not switching from a given supplier (Davis-Sramek et al., 2008). In relation to repurchase intentions, customer loyalty includes customers' perceptions of continuity expectations, such as business relationship renewal. Scholars have acknowledged the multidimensional nature of customer loyalty; however, a consensus has not been reached regarding the dimensions that should be incorporated in its measurement.

Recently, Watson et al. (2015, p. 26) stated that 'customer loyalty is a collection of attitudes aligned with a series of purchase behaviours that systematically favour one entity over competing entities' (p. 804). Further, they underline the systematic divergence between conceptualisation (What is customer loyalty?), measurement of loyalty (How is it measured?) and, finally, the implications for strategy and performance (What actually matters?).

Table 2.1 provides a list of major studies that have discussed loyalty in the B2B context in the major journals of marketing and supply chain/logistics. The majority captured the data from the customer's side of the dyad. Thus, in our business context we define loyalty in terms of a customer's intent to repurchase and to do business with the supplier in the future.

Keeping loyal customers means having customers whose lifetime value is greater than that of a customer who seldom purchases company products and services and is likely to easily switch to another supplier or service provider. The importance of customer loyalty is summarised by the concept of the 'lifetime value' of the customers. Customer lifetime value looks at a customer's financial value to the firm based on predicted future costs and transactions; measuring the lifetime value of a customer requires an estimation of the likely cash flow from a customer over the life of his or her relationship and loyalty with the firm (Gupta et al., 2006; Kumar, 2008; Ritter and Andersen, 2014). In a few words, if customers remain loyal to a supplier, their lifetime value can be enhanced.

Understanding the antecedents and the reasons for customer loyalty should help in developing the most appropriate supply chain strategy. That is a great effort but it deserves higher attention on customer complaints and customer dissatisfaction. Typically, a company takes more energies in getting customers rather than in keeping them. Consequently, many practitioners have failed to comprehend the importance of customer loyalty as a driver of profitability and hence have tended to concentrate just on short-term perspective with the aim of increasing market share (Christopher and Peck, 2012).

Stank, T. P., Pellathy, D.A., In, J., Mollenkopf, D.A. and Bell, J.E. (2017). 'New frontiers in logistics research: Theorizing at the middle range', *Journal of Business Logistics*, 38(1), 6–17.

Stock, J. R. and Lambert, D. M. (2001) *Strategic logistics management*, Boston, MA: McGraw-Hill/Irwin.

Thai, V. V. (2013) 'Logistics service quality: conceptual model and empirical evidence', *International Journal of Logistics Research and Applications*, 16(2), 114–131.

Tsai, M.-T., Tsai, C.-L. and Chang, H.-C. (2010) 'The effect of customer value, customer satisfaction, and switching costs on customer loyalty: an empirical study of hypermarkets in Taiwan', *Social Behavior and Personality: An International Journal*, 38(6), 729–740.

Ulaga, W. (2003) 'Capturing value creation in business relationships: a customer perspective', *Industrial Marketing Management*, 32(8), 677–693.

Ulaga, W. and Eggert, A. (2006a) 'Relationship value and relationship quality', *European Journal of Marketing*, 40(3/4), 311–327.

Ulaga, W. and Eggert, A. (2006b) 'Value-based differentiation in business relationships: gaining and sustaining key supplier status', *Journal of Marketing*, 70(1), 119–136. doi:10.1509/jmkg.2006.70.1.119.

Van Thienen, S., Delesalle, P., Overdulve, K. and Vandevelde, S. (2014) *The hidden value in reverse logistics point of view*, Deloitte Consulting, Creative Studio at Deloitte, Belgium. Available at https://www2.deloitte.com/content/dam/Deloitte/be/Documents/process-and-operations/BE_POV_Supply-chain-strategy_20140109.pdf. Accessed on 12th November 2016.

Verbeke, W., Dietz, B. and Verwaal, E. (2011) 'Drivers of sales performance: a contemporary meta-analysis: have salespeople become knowledge brokers?', *Journal of the Academy of Marketing Science*, 39(3), 407–428.

Verhoef, P. C. (2003) 'Understanding the effect of customer relationship management efforts on customer retention and customer share development', *Journal of Marketing*, 67(4), 30–45.

Wagner, S. M. and Friedl, G. (2007) 'Supplier switching decisions', *European Journal of Operational Research*, 183(2), 700–717.

Wallenburg, C. M., Cahill, D. L., Michael Knemeyer, A. and Goldsby, T. J. (2011) 'Commitment and trust as drivers of loyalty in logistics outsourcing relationships: cultural differences between the United States and Germany', *Journal of Business Logistics*, 32(1), 83–98.

Walsh, G., Albrecht, A. K., Kunz, W. and Hofacker, C. F. (2016) 'Relationship between online retailers' reputation and product returns', *British Journal of Management*, 27(1), 3–20.

Wangenheim, F. and Bayón, T. (2004) 'The effect of word of mouth on services switching: measurement and moderating variables', *European Journal of Marketing*, 38(9/10), 1173–1185.

Watson, G. F., Beck, J. T., Henderson, C. M. and Palmatier, R. W. (2015) 'Building, measuring, and profiting from customer loyalty', *Journal of the Academy of Marketing Science*, 43(6), 790–825. doi:10.1007/s11747-015-0439-4.

Wetzels, M., De Ruyter, K. and Van Birgelen, M. (1998) 'Marketing service relationships: the role of commitment', *Journal of Business & Industrial Marketing*, 13(4/5), 406–423.

Whitten, D. and Wakefield, R. L. (2006) 'Measuring switching costs in IT outsourcing services', *Journal of Strategic Information Systems*, 15(3), 219–248.

Wind, Y. (November 1970) 'Industrial source loyalty', *Journal of Marketing Research*, 7(4), 450–457.

Woisetschläger, D. M., Lentz, P. and Evanschitzky, H. (2011) 'How habits, social ties, and economic switching barriers affect customer loyalty in contractual service settings', *Journal of Business Research*, 64(8), 800–808.

3 The era of omnichannel

From offline to online: the impact of digitalisation

> Whereas before they came here with these bags and flushed out every pair of shoes . . . now even the customers got used over time, and we allowed them: ok, send me an email, let me see what the problem is, we solve it, if we can't send me over the defect product, we need to manage and to keep the relationships . . . There is a much more direct and continuous contact with the customers in the era of digitalisation, in the era of iPad . . . it is very accelerated the demand of any kind . . . replenishment order, delivery times until product returns.

This is a very recent comment by a global fashion company's director of operations. From his voice can be deduced one of the many impacts digitalisation has on operations and SCM. Thus, the rapid growth of information and communication technology (ICT) has radically altered the way people collect information, evaluate consumption alternatives, the way they shop every day. To mention just a few numbers: people accessing the Web via multiple devices, from mobile phones to computers and other devices, has reached over 3 billion in 2016, counting almost 40% of the population worldwide (Internetlivestats, 2016).

This implies that people also shop using several devices and do not merely go to the closest store. Such behaviour leads the online retail context to be in continuous evolution, with estimations that online sales will account for more than 12% by 2019 – more than doubled compared with online sales registered in 2015 (Nielsen, 2016). Digitalisation has rapidly changed not only how we buy but also how and where we review products and services, and the way we communicate with other people and with the brands. From sensors and cloud services to nanotech, big data and real-time data, several technologies drive digital trends also in the B2B industry. How fast this digital technology enables advances in performance and costs will determine how quickly they bring changes in managing supply chains (Sanders, 2014).

In this sense, digital technology has already dramatically changed firms' operations, logistical activities, communication and marketing strategies and their relationships with suppliers and customers, as well as the way in which customers are served. Such changes have also influenced consumers to be more collaborative and interactive. Thus, consumers are not just passive individuals

to whom a company must propose a product or a service, but are an integrated partner of the company (Lusch and Vargo, 2014). With the emergence of new technologies and e-business models, the role of the customer is being transformed from a passive buyer to an active participant in co-creating value. This 'proactivity' has led to a proliferation of online feedback, more accessible and visible data about orders and product returns, information about brands, products and services preferences, and choices. Such data can be very useful for companies and for SCM. Indeed, supply chain managers are increasingly reliant upon data to gain visibility into expenditures, identify trends in costs and performance and support process control, inventory monitoring, and production optimisation and process improvement efforts. In fact, many businesses are awash with data, with many seeking to capitalise on data analysis as a means for gaining a competitive advantage (Hazen, Boone, Ezell and Jones-Farmer, 2014).

Samplings of user feedback show that transactions between partners connected on the social network result in significantly higher user satisfaction, bringing the supply chain into a new era. The potential of tools such as the feedback system and the Facebook 'like' button is huge and it can easily be moved from e-commerce platforms to B2B e-market and e-procurement platforms. The primary objective of Supply 2.0 is to support internal and external information and communication processes and to ensure that relevant information is available in companies and supply chains through the use of lightweight technology (Christopher and Holweg, 2011).

The importance of integration and synchronisation of data and communications to and by the customer represents a hot topic for several companies we have met over the years, as this operations manager of a global manufacturer for the propulsion system marine application industry sector highlighted:

> I understood the customer was changing because the end user was requesting a system completely different from the time . . . we have to change our process. After this, one year as we set in all the processes we arrived at a very good situation and the customer was very satisfied . . . What was a mistake in the past was that our customers were between us and the end user. They were talking to the end user and that was supposed to be enough for them to understand. We were close to the end user and I started to push, push, after that problem with the product, this is a problem that we could avoid. So, the one problem with communication is now this. Avoid any circle and go in a straight line to the customer.

The digital transformation should help companies to be more integrated and in contact with the customers, and with the customers of the customers, until the end users. Such changes have several implications for companies and the B2B context must deal with this transformation to digital as well. In response to these changes, research has focused on designing new supply chain models and multichannel and governance strategies to improve results. Faster replenishment times, quicker times to market and shorter delivery times have been shown to

improve the performance of entire value chains and enhance customer satisfaction and loyalty.

Another issue is related to the consequences of online shopping growth for shopping in a physical store. The digital revolution has transformed forecast consumer purchasing paths into several touchpoints to be covered; thus, the B2B method of selling has also become less predictive as customers research, evaluate, select, repeat and share experiences about products. Both theory and practice could be enriched if research aimed to develop a better understanding of how digital technologies can most effectively be used to manage supply chains (Waller and Fawcett, 2013; Richey Jr, Morgan, Lindsey-Hall and Adams, 2016). Traditional manufacturers and retailers need to create supply chains, operation models and multichannel strategies to meet online and offline requirements.

As Andrew Shaw, Ducab's Managing Director leading manufacturers of energy cables in the Middle East, describes:

> There's a temptation to see digitisation as being most significant in consumer-facing markets, but it's equally relevant for manufacturers like us in a B2B environment. The momentum of change is gathering pace, through initiatives with suppliers and customers and the opportunity for cost savings.
>
> (Khurana and Al-Olama, 2016)

Today, distribution channel systems are increasingly complex, as producers must serve their end-user markets through multiple channels and partners. Under such systems, the level of complexity increases, as firms must choose between different business models that rely on different technological choices. The so-called Industry 4.0[1] will change the whole supply chain; through the integration with suppliers and logistics optimisation, transaction costs and inventory levels can be lower. A better use of smart labels and a more comprehensive use of data will track and trace inventory on site and in transit to customers; in brief, there is the chance to gain some competitive advantage for first movers.

Moreover, with the advent of e-commerce and e-procurement, the need for specific skills and competencies in the outsourcing context has created new challenges in the inter-organisational context of customer-supplier relationships. Thus, a firm may outsource its services to enhance its customer services and flexibility by negotiating with a third party with specific expertise for the provision of non-core services. Subsequently, a large part of governing supply chains comprises managing and governing multiple relationships among member organisations.

Within this context, technology can act as one of the primary facilitators of a supply chain excellence strategy. Yet great care must be exercised in selecting and applying technology within a context as complex as the extended supply chain in the new era. One of the ways to improve the benefits of the supply chain competition is through the use of advanced ICT tools available on the market, harnessing them into a decision dashboard. For example, supply chain

integration is the most important factor that derives effects from e-procurement to SCM, implying that supply chain integration represents the main reason to explain the processes through which e-procurement contributes to supply chain performance (Hsin Chang, Tsai and Hsu, 2013). Consequently, a number of important questions in the operationalisation of omnichannel strategies have needed to be delivered, basically because the traditional supply chain is not a good fit for the purpose of omnichannel.

For example: is one channel replacing the other? If not, how can brick-and-mortar and online contexts work together to enhance companies' performance and at the same time satisfy the customer? The answer is that consumers do not merely visit the store and then go digital to look for the lowest-cost offer, they search for information and evaluate alternatives online while deciding to purchase the product in-store. Such integration of channels requires a rethink of company strategies, not only from a marketing perspective, understanding the customer's journey and suggesting the right offer in the right place, but also from a logistics perspective, from order to delivery to the final customer (Kwon and Lennon, 2009).

The three top activities that consumers like to do online are: search information about products and services, compare among alternatives (in particular, prices) and search for discounts or coupon and special deals. For instance, considering the products or services, consumers are more likely to search for information online. A recent study found that consumer electronics and travel products online are the most searched products prior to purchase, while for consumable goods such as groceries or beauty products the percentage is lower than for durable goods (Nielsen, 2016).

In the same study, that might be interesting to explore, is what consumers do *not* do online. Surprisingly, the lowest rate (about 10% of the respondents) was given to the usage of the following activities or tools: the usage of online advertisements, to clicking a store email and liking, tweeting or commenting about a product or a brand. Such results are opposed to what companies rely on for the Web, and further investigation is required to understand better what consumers like and get engaged with and what they dislike in relation to online channels.

What the online context has reinforced is that customers are loyal to experiences, not to companies. This does not mean it has killed loyalty, but it has shown new models of loyalty based on experience rather than brands, products and companies. Recently, sales models took the form of a classic sales and marketing funnel in which customers moved in a linear fashion from discovery to consideration to evaluation to purchase. The key point was the 'purchase' action for companies, which secured loyalty. Consequently, all the company's investment efforts into building loyalty were concentrated in this phase, through discounts, rebates and offers. The common belief was that once the customer was acquired she or he would stick with the company. Digitalisation has brought more dynamism to customers, providing them with more information, opinions and opportunities, and lower costs to access to new companies, products and

offers. Digitalisation has also shed more light on what leads to customer retention, based more on experience than transaction. This is the quality of experience customers perceive before, during and after sales and is confirmed by a recent study, which found:

- 65% of consumers use online channels – not primarily for price advantages, but for convenience, speed, the quality of information provided and access to a broader range of choices.
- 60% find 'being promised one thing and delivered something else' the most frustrating experience they can have with a company.
- 65% (nearly 80% in emerging markets) have switched at least one provider in the past year because of poor service.
- 82% of 'switchers' believe companies could have retained them with better experiences and more accurate expectations.

(Quiring and Schunck, 2015)

Although the reasons that lead consumers to purchase online vary from person to person and are based on the product or service and other variables, in Table 3.1 we attempt to summarise the main benefits (Forsythe, Liu, Shannon and Gardner, 2006; Escobar-Rodríguez and Carvajal-Trujillo, 2013; Jiang, Yan and Jun, 2013) that motivate and the main challenges that limit consumers to purchase online.

Consequently, consumers' choices and perceptions have a huge impact on the supply chain, where decisions must be taken regardless the channels, products and services; operations need to be reorganised to succeed in the two channels, considering the perceived benefits and barriers from purchasing from the channels. Table 3.1 summarises the main barriers consumers face when buying online. Such barriers have a heavy impact on B2B operations and supply strategies as they might lead suppliers to revise their returns policies to lower the risk of not trying the product, to extend the guarantee of products and to revise their delivery options.

From multichannel to omnichannel – the company perspective

Digitalisation has not only changed purchasing habits but has also affected the entire supply chain system. The supply chain today is a series of several nodes, siloed steps taken through upstream raw material via sourcing, plan, design and production, logistics distribution, sales and finally into the hands of the customer. Digitisation potentially brings down those walls, and the supply chain becomes a completely integrated ecosystem that is fully transparent to all the members involved.

Consumers integrate digital touchpoints within the traditional offline journey to purchase, from reading online reviews about products to using their mobile phone apps to purchase or to ask advice from online shopping assistants.

Quiring, K. and Schunck, O. (2015) *Is digital killing loyalty?* Available at www.accenture.com/t20160914T055657__w__/us-en/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Dualpub_13/Accenture-Is-Digital-Killing-Loyalty.pdf#zoom=50. Accessed on 17th October 2016.

Rangaswamy, A. and Van Bruggen, G. H. (2005) 'Opportunities and challenges in multichannel marketing: an introduction to the special issue', *Journal of Interactive Marketing*, 19(2), 5–11.

Richey Jr., R. G., Morgan, T. R., Lindsey-Hall, K. and Adams, F. G. (2016) 'A global exploration of big data in the supply chain', *International Journal of Physical Distribution & Logistics Management*, 46(8), 710–739.

Richey, R. G., Tokman, M. and Dalela, V. (2009) 'Examining collaborative supply chain service technologies: a study of intensity, relationships, and resources', *Journal of the Academy of Marketing Science*, 38(1), 71–89.

Rieh, S. Y. (2002) Judgment of information quality and cognitive authority in the Web. *Journal of the American Society for Information Science and Technology*, 53(2), 145–161.

Rozados, I. V. and Tjahjono, B. (2014) *Big data analytics in supply chain management: trends and related research*. Paper Presented at the 6th International Conference on Operations and Supply Chain Management.

Russo, I., Confente, I. and Borghesi, A. (September 2015) *Using big data in the supply chain context: opportunities and challenges*. Paper presented at the European Conference on Knowledge Management, p. 649.

Sanders, N. R. (2014) Big data driven supply chain management: a framework for implementing analytics and turning information into intelligence, Old Tappan, NJ: Pearson Education.

Sanders, N. R. (2016) 'How to use big data to drive your supply chain', *California Management Review*, 58(3), 26–48.

SCM World. (2014) *'Latest chief supply chain officer report' The chief supply chain officer report 2014'*. Available at www.scmworld.com/home/. Accessed on 17th November 2016.

Stank, T. P., Dittmann, P. J. and Autry, C. W. (2011) 'The new supply chain agenda: a synopsis and directions for future research', *International Journal of Physical Distribution & Logistics Management*, 41(10), 940–955.

Stolze, H. J., Mollenkopf, D. A. and Flint, D. J. (2016) 'What is the right supply chain for your shopper? Exploring the shopper service ecosystem', *Journal of Business Logistics*, 37(2), 185–197.

Ternstrand, C., Selldin, E., Virta, N. and Linder, S. (2015) 'Omni-channel retail: a Deloitte point of view'. Available at httpshttps://www2.deloitte.com/content/dam/Deloitte/se/Documents/technology/Omni-channel-2015.pdf. Accessed on 20th January 2017.

Waller, M. A. and Fawcett, S. E. (2013) 'Data science, predictive analytics, and big data: a revolution that will transform supply chain design and management', *Journal of Business Logistics*, 34(2), 77–84.

Wilson, R. D. (2010) 'Using clickstream data to enhance business-to-business web site performance', *Journal of Business & Industrial Marketing*, 25(3), 177–187.

www.accenture.com/t20160914T055657__w__/us-en/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Dualpub_13/Accenture-Is-Digital-Killing-Loyalty.pdf#zoom=50. Accessed on 14th January 2017.

www.amazon.com/b?node=16008589011(www.amazon.com/b?node=16008589011). Accessed on 14th January 2017.

www.internetlivestats.com/Internet-users/. Accessed on 13rd December 2016.

Yan, R. (2011) 'Managing channel coordination in a multi-channel manufacturer – retailer supply chain', *Industrial Marketing Management*, 40(4), 636–642.

4 Managing the supply chain in the digital context

New issues for supply chain operations

Going digital by integrating traditional channels with digital channels represents a challenge for companies, since this change has several implications for logistics, distribution, organisation management and for the whole supply chain. As an example, Toys "R" Us Inc. prepared for November and December 2016 its entire supply chain of 870 stores to ship nearly twice as many units from its stores. It used inventory in stores for Web orders and organised transport from nearly 25% more from fulfilment centres to serve the Web orders during the Christmas holiday, a period that generates half of all annual toy sales. Moreover, the companies needed to recruit seasonal warehouse workers and keep a balance between online promotions and the ability to fulfil orders quickly, so that items would arrive by Christmas (Ziobro, 2016).

For example, today, major companies must engage in the tentative building of more omnichannel strategies as a competitive necessity. They further noted that more research is needed to understand how profits can be yielded from the provision of such services (Goldsby and Zinn, 2016). One of the key issues in this research area is how new channels can be developed by insourcing or outsourcing strategies, how specific resources should be allocated and how operations should be organised across the supply chain. Such practices have changed the rules of competition and raised questions such as: Who controls orders? Who is responsible for pilot delivery lead times? What kind of capabilities does the company need? Who checks the availability of products? What is the role of 3PL? Who manages the reverse logistics in a supply chain network? How firms can reduce supply chain risks?

Continual non-availability of key items could be a major factor in diminishing customer loyalty. Although omnichannel strategy is becoming a competitive necessity, channel integration is hard to achieve, as several companies (most of them at a retail stage) still think separately. In fact, most multichannel retailers maintain a silo structure, where online and offline stores are kept and managed independently of each other (Herhausen, Binder, Schoegel and Herrmann, 2015). Hence, further work remains to be done to achieve channel integration, and this goal remains one of the key focuses for retailers and channel managers.

Integration can enhance customer value perception and from a company perspective can lead to optimised resources and effort, thereby improving efficiency. Of course, there might be a counter-effect of integration: it could be seen as a zero-sum game, creating a sort of cannibalisation among channels (Falk, Schepers, Hammerschmidt and Bauer, 2007) or missing complementarity among distribution channels (Zhang et al., 2010). However, a recent study provides support for the omnichannel, finding no negative effect of omnichannels for traditional stores in terms of cannibalisation or concerning 'channel substitution'. Indeed, authors found support that the Internet channel complements the physical channel (Herhausen et al., 2015). So, achieving channel integration might present advantages but also some threats to companies, and for this reason a deeper analysis of the consequences and implications of omnichannels for each step of the logistics process can be relevant for both academics and practitioners.

The supply chain plays a key role within this context, as it represents the backbone on which online and offline operations take place and are designed. SCM ensures that all processes perform well, that warehousing and distribution operations are optimised and that, at the end, final consumers receive what they have been promised. To close the loop, product returns management represents an increasing challenge for companies because they are a cost driver from one point of view, but they are also a perceived benefit of customers from another point of view. This is, particularly so in the online context where they lower the perceived risk when purchasing online. To gain and maintain a competitive advantage, SCM needs to achieve internal efficiency, reduce costs and at the same time speed the delivery to the final customer, thereby improving effectiveness. To fulfil omnichannel customers' orders, companies must offer
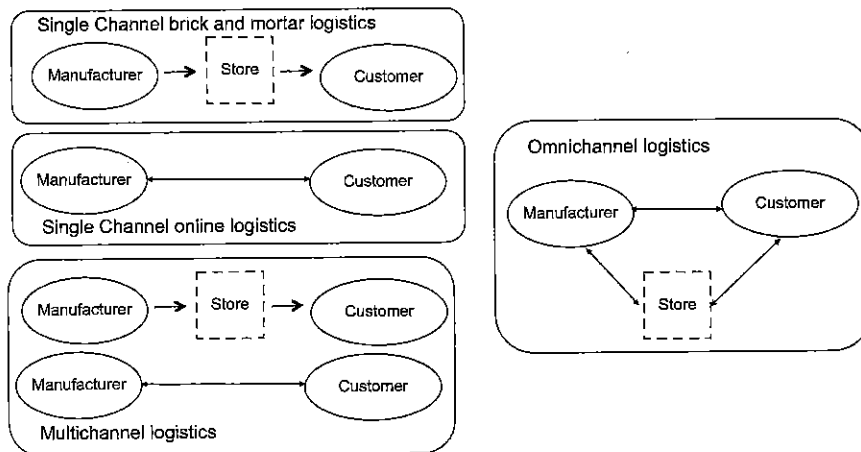

Figure 4.1 Differences between single, multiple and omnichannel logistics

Source: Adapted from Hübner, Holzapfel and Kuhn (2015)

what they want, when they want, where they want. This has serious implications for logistics operations and order fulfilment. To add more complexity, this should be done within two contexts – offline and online – but with orders that come from multiple points: brick and mortar, showrooms, online channels and mobile, among others (Ternstrand, Selldin, Virta and Linder, 2015). Recently, Peinkofer, Esper and Howlett (2016) examined consumer responses to the disclosure of limited inventory availability in an online business context; their research revealed an interesting finding that runs counter to the prediction that disclosure of limited inventory availability would reduce the dissatisfaction of stock-out situations.

Returns are three times more prevalent for online retailers, according to the National Retailer Federation (2015), and have been among the area of lowest satisfaction with shoppers over this five-year study; thus, the area of returns is one that most retailers should improve. In parallel, a recent survey of UPS (Ivory and Barker, 2016) underlines how the store returns provide an opportunity for retailers to save the sale or develop a loyal customer. A successful experience starts with order fulfilment that includes the necessary paperwork to complete the transaction. The in-store experience must include well-trained and helpful associates, short queues and accessible counters that facilitate convenient shopping. And, finally, the research shows 45% of the sample made an additional purchase when processing a return on a website.

Logistics operations where channel transition has led to several changes and improvements can be summarised as follows: inventory, picking, assortment, delivery, returns, organisation and the information technology (IT) system. Managing these changes implies a significant investment in infrastructure, knowledge and processes for warehousing and distribution. In the following paragraph, we will highlight the main implications for each step, reporting the key findings of a recent study about transition from the multichannel to omnichannel context (Chopra, 2016; Hübner, Wollenburg and Holzapfel, 2016; Kotzab Herbert, Hübner, Kuhn and Wollenburg, 2016).
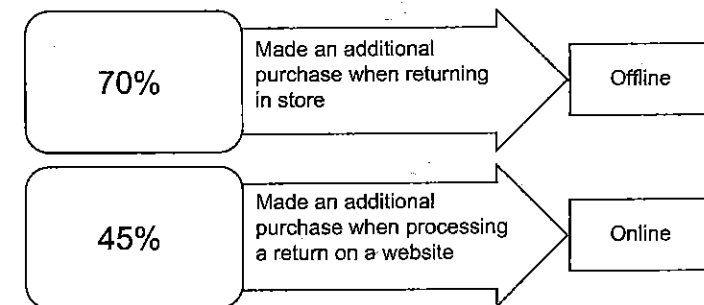

Figure 4.2 Offline versus online purchases

Adapted from Ivory and Barker (2016)

5   Theory, methods and practice for measuring customer loyalty

Introduction

This chapter begins by identifying different methodologies that could be suitable for approaching and measuring customer loyalty, with a particular focus on the B2B context. To achieve this, the chapter opens with an overview of complexity theory and then it will apply a multi-step approach of analysis to two cases.

Although the extant literature helps identify various predictors of customer loyalty, past studies have concentrated exclusively on the 'net effects' of these antecedents. Yet, there are theoretical reasons to suggest that these effects may be more complicated than they first appear. According to complexity theory, in the real world, 'relationships between variables can be non-linear, with abrupt switches occurring; thus, the same "cause" can, in specific circumstances, produce different effects' (Urry, 2005, p. 4). In line with this theorising, we will attempt to show how firms participating in B2B markets can achieve high levels of customer loyalty under different configurations of several variables (for instance, perceived offer quality, service support, and personal interaction). To address this goal, we employ qualitative comparative analysis (QCA). This method uses Boolean algebra rules to identify which of the attribute combinations, if any, act as sufficient or necessary conditions for the outcome. The QCA method assumes that the influence of attributes on a specific outcome (in this case, customer loyalty in a B2B context) depends on how the attributes are combined.

To summarise, beyond more 'standards approaches' such as statistics and quantitative methods (e.g., structural equation modelling, multiple regression analysis, analysis of variance [ANOVA]), this chapter will provide a qualitative approach that will explain the complex world of understanding and measuring customer loyalty.

Applying complexity theory to customer loyalty in a supply chain context

Typically, there is a significant asymmetry of knowledge between the supplier and the customer, along with knowledge transfer difficulties and the complexity of evaluating the quality of the offering. A positive evaluation of this should contribute to maintaining business relationships and preventing switches to other suppliers. The increasing complexity of understanding the roles, relationships and drivers among buyers, suppliers, manufacturers and other parties in the B2B context is part of the challenge to understanding and maintaining loyalty. To deliver better value throughout the supply chain to the end consumer, it is important to understand these players' role in value propositions and the relative complexity between the supplier/manufacturer and the customer. Modern customers are more likely than those of the past to switch suppliers, but the literature and the practice itself led us to believe this behaviour can be attenuated by different combinations of attributes or resources, leading to differential loyalty gains for companies with more effective processes for dealing with flows. Complexities can arise when the buyer-supplier relationship involves a plethora of exchanged goods and services with varying levels of switching costs and customer satisfaction. Gummesson (2008) underlined how marketing is complex as there are several variables interacting. As in a business context unique situations are potentially without limit, network theory, which is part of the complexity theory, can be suitable to face and manage such uniqueness and complexity. For example, 'strategy' can refer to a set of guidelines that influence decisions and behaviour, and the complexity of strategic interactions, whether in chess, soccer, politics or in business, makes it essential to adopt simplifying strategies to guide decisions (Levy, 1994). The complexity of interactions and relationships along the supply chain is such that one cannot easily predict in terms of outcome how the system will operate under various antecedents. Indeed, Simon (1962) defined a complex system as being composed of interconnected subsystems that work together with a specific form of hierarchy. Several theories and a body of research have tried to interpret the complex system – from cybernetics to general systems theory, through catastrophe theory and chaos theory, to name a few (Levy, 1994; Simon, 1996; Anderson, 1999; Mele and Polese, 2011; Byrne and Callaghan, 2013; Wu, Yeh, Huan and Woodside, 2014). In organisation science, there are different levels of complexity: vertical, as the number of organisational hierarchies; horizontal, as the number of departments and job titles across the organisation; or spatial, as the number of geographical locations (Anderson, 1999).

An organisation must try to match the complexity of an organisation's structure with the complexity of the macro- and microenvironments. Because of the complex reality in which the phenomenon of interest manifests itself, complexity theory tenets can help provide a more accurate understanding of what generates a phenomenon. Table 5.1 summarises the core tenets of complexity theory.

Consistent with complexity theory and its tenets, this chapter investigates how firms can achieve high levels of customer loyalty under different configurations of antecedents. Research on complexity theory indicates that if a system passes a particular threshold with minor changes in the controlling variables, switches occur such that a liquid turns into gas, or a large number of apathetic people suddenly tip into a forceful movement for change (Gladwell, 2006), that 'such tipping points give rise to unexpected structures and events' (Urry, 2005, p. 5). This highlights the complexity of the relationship between an antecedent and an outcome variable, and the possibility that the relationship would change

Table 5.1 Tenets of complexity theory

Tenets	
T1	A simple antecedent condition may be necessary, but a simple antecedent condition is rarely sufficient for predicting a high or low score in an outcome condition.
T2	A complex antecedent condition of two or more simple conditions is sufficient for a consistently high score in an outcome condition – the recipe principle.
T3	A model that is sufficient is not necessary for an outcome having a high score to occur – the equifinality principle.
T4	Recipes indicating a second outcome (e.g., rejection) are unique and not the mirror opposites of recipes of a different outcome (e.g., acceptance) – the causal asymmetry principle.
T5	An individual feature (attribute or action) in a recipe can contribute positively or negatively to a specific outcome depending on the presence or absence of the other ingredients in the recipes.
T6	For high Y scores, a given recipe is relevant for some but not all cases; coverage is less than 1.00 for any one recipe. A few exceptions occur for high X scores for a given recipe that works well for predicting high Y scores.

Source: Woodside (2014)

based on different configurations. Definitions of complexity commonly used in the organisational domain are often tied to the concept of a system.

This perspective is supported by network theory, which forms a part of complexity theory. Network theory indicates that a network is made up of nodes (e.g., individuals, firms) and relationships and interaction among the nodes. Infusing all disciplines for its cross-cutting content, complexity reflects the attention that scholars of different disciplines give to this issue (Barile and Polese, 2010). Applying complexity theory allows scholars to have a deeper and richer perspective of data, and a superior predictive accuracy of using algorithms versus regression models, particularly in the social sciences (Gigerenzer, 1991; Sterman and Wittenberg, 1999; Gigerenzer and Brighton, 2009; Woodside, 2015). However, it is challenging for a practitioner to convert the complexity of his or her real business world by selecting a number from a scale. Nevertheless, social science complexity analyses reveal how there is order and disorder within various systems. In other words, complexity theory requires different types of marketing reactions or supply chain responsiveness when a business context increases in complexity and turbulence. As the environment context, processes, product, suppliers and customers become more complex, the company must focus its scarce resources on those activities that will give the best result. This is one of the reasons for the emergence of constructs such as supply chain agility, supply chain resiliency and customer value anticipation, to name a few. The degree of complexity is derived from the structural properties of the system as determined by the number and variety of elements defining the supply chain and their interactions (e.g., the number of participants, facilities and warehouses, products, transportation links, information and financial flows) (Choi and Krause, 2006; Manuj and Sahin, 2011).

Crafting and testing theories of main and interaction effects fails to capture the complexity inherent in the B2B context. Complexity theory helps to devise hypotheses that are less overly simplistic and that offer better and different findings – above all, that offer a potential contribution to theory. Understanding the drivers is critical when devising strategies to manage the resulting complexity. It would be more useful to transcend to a complexity theory perspective on B2B inter-firm relationships and outcomes, particularly in research such as ours where we included a study of dynamic relationships with independent variables (or complex antecedent conditions) affecting dependent variables (or outcome conditions) in different time periods.

Complexity theory suggests that numerous variables interact without the constraints of limited unique situations, that change is ordinary and that processes are not linear but iterative (Woodside and Baxter, 2013; Woodside, 2014; Wu et al., 2014). In summary, complexity theory helps provide a more accurate and comprehensive picture of customer behaviour by accounting for the dynamic and complex relationships among the variables under investigation (Russo, Confente, Gligor and Autry, 2016). As such, in our exemplar cases, instead of analysing the main effects of certain predictors, we seek to determine configurations (i.e., combinations of antecedents) that help explain customer loyalty in the B2B context.

In the following paragraphs, we will introduce and describe two approaches of data analysis for the same B2B scenario. First, we will contextualise the case, industry and sample that we adopted in previous studies for different purposes (Russo et al., 2016; Russo et al., 2017); after that we will define the variables of interest in our model. Such variables will be analysed following a more traditional approach (multiple regression analysis) and then through QCA using fuzzy sets.

In the second part of the chapter, a second case related to LSQ will be analysed adopting the same multi-step approach.

Study A. Measuring value perception and loyalty in the business-to-business context

Data collection, survey development and sampling

The aim of Study A was to explore the perception of value drivers in a B2B health care service context and their impact on customer loyalty. The focus is on the repeated purchase intent dimension of customer loyalty. Repurchase intent has been described as customers' anticipation of purchasing again, their commitment to retain the relationship or intent to continue a relationship with a provider for the foreseeable future.

The health care industry was selected for several reasons. Investigating the health care industry through tools commonly applied in business management research has a wide diffusion (Berry and Bendapudi, 2007; Crié and Chebat, 2013), with the complexity of the product offering driving final customers to search for advice from trustworthy and reliable sources. As such, this industry represents a good example of a changing marketing channel structure that has emerging actors who have adopted a larger role in the manufacturer–end consumer exchange.
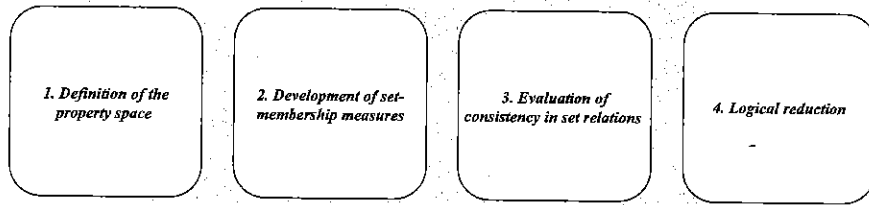
Figure 5.7 Steps for qualitative comparative analysis

Source: Our elaboration

shows the potential configuration of attributes in their combination of presence (high scores of X are assigned 1) or absence (low scores of X are assigned 0) in determining the outcome varible (high values of loyalty are assigned 1). The attributes we decided to adopt here for QCA analysis are offer quality (OQ), personal interaction (PI), service support (SS), product specification (product), percentage of expenditure with this supplier (expend) and length of partnership (partnership).

We exclude from the present analysis some attributes related to overall evaluation or perception, such as satisfaction and value perceived by customers, and perceived switching costs and product returns management, which we have already analysed in a previous manuscript (Russo et al., 2016). The aim here is to demonstrate how to use a method for data analysis and we do not strive at validating or testing specific theories or assumptions.

Following the first step, as suggested by Fiss (2007), we used these set measures to construct a data matrix (truth table) with 2^k rows, where k is the number of causal conditions (variables) used in the analysis. Each row of this table is associated with a specific combination of attributes, and the full table thus lists all possible combinations (for our study, we have $2^6 = 64$ combinations).

Some rows will contain more cases, some others very few and some rows could contain zero cases if there is no empirical evidence of such specific combinations of attributes.

Set-membership measures is the second phase of the analysis and consists of setting membership measures for the attributes. The conventional set (labelled the 'crisp' set) is dichotomous; that is, a case can be 'in' (present = 1) or 'out'

OQ	PI	SS	Product	Partnership	Expend	Number	Loy	Raw consist.	PRt consist.	SYM consist.
1	1	0	1	1	1	12		0.968620	0.928572	0.981132
0	1	1	0	1	0	8		0.888066	0.428575	1.000000
0	1	1	0	1	1	6		0.916049	0.700003	1.000000
1	0	0	1	0	1	2		1.000000	1.000000	1.000000
0	1	0	0	0	0	2		0.933851	0.333334	0.500000
1	1	1	1	0	0	1		1.000000	1.000000	1.000000
1	1	0	1	1	1	1		0.989525	0.960000	0.960000
1	1	0	0	1	0	1		0.968978	0.714286	0.833333
1	0	0	1	1	0	1		1.000000	1.000000	1.000000
1	0	1	1	0	1	0		0.984244	0.937500	0.937500
1	1	1	1	1	0	0				
1	1	1	1	1	1	0				
1	1	1	0	0	1	0				
1	1	1	0	1	0	0				
1	1	1	0	1	1	0				
1	1	1	0	0	0	0				

Figure 5.8 Truth table of potential combinations

Table 5.12 Configurations for achieving high loyalty

Configurations Solutions		
	1	*2*
Personal contact quality	●	●
Information quality	●	●
Ordering procedure	●	●
Order accuracy	●	●
Order condition	●	●
Order discrepancy handling	⊗	•
Timeliness	⊗	•
Consistency	0.903	0.376
Raw coverage	0.383	0.143
Unique coverage	0.150	0.887
Solution coverage		0.53
Solution consistency		0.90

Legend
● = Core causal condition present
⊗ = Core causal condition absent

of loyalty (as Method 1 confirmed through regression analysis). In contrast, a full recipe of predictors is necessary, or of most of them, supporting tenet 2.

Final comment

To summarise, QCA is particularly useful for several objectives. It can been adopted alone or, even better, in combination with more conventional methods. It can help to summarise data and to text hypotheses and theories. Moreover, it can provide a better overview about data and relationships among variables. In addition, based on results derived from such analyses, QCA is helpful in delivering inputs for the development of new theoretical arguments.

From our experience, QCA should be applied together with other data analysis techniques in a complementary way, especially if the aim is to draw causal inferences. In fact, it offers scholars a meaningful interpretation of results, being more precise compared with statistical methods in highlighting the existence of differences between cases and in clustering different paths towards an outcome. Such methodologies (mixed methods) can deliver added value and they can include multiple methods in a step-wise progression (for instance choosing a qualitative method first, followed by a quantitative method, or selecting the same method adopted in different steps). Nevertheless, a disadvantage of such an approach is that, generally, multi-method studies must deal with very restrictive space limitations required by journal articles. However, in the case that QCA is the only method used, it is important to report step by step the research process that generated the data and to remind the reader which other methods (both qualitative as case studies, or quantitative as statistical analyses) should be applied in subsequent analyses, and why.

Notes

References

Anderson, P. (1999) 'Perspective: complexity theory and organization science', *Organization Science*, 10(3), 216–232.

Armstrong, J. S. (2011) *Illusions in regression analysis*. Available at SSRN 1969740.

Barile, S. and Polese, F. (2010) 'Smart service systems and viable service systems: applying systems theory to service science', *Service Science*, 2(1–2), 21–40.

Berry, L. L. and Bendapudi, N. (2007) 'Health care a fertile field for service research', *Journal of Service Research*, 10(2), 111–122.

Blocker, C. P. (2011) 'Modeling customer value perceptions in cross-cultural business markets', *Journal of Business Research*, 64(5), 533–540.

Blocker, C. P., Flint, D. J., Myers, M. B. and Slater, S. F. (2011) 'Proactive customer orientation and its role for creating customer value in global markets', *Journal of the Academy of Marketing Science*, 39(2), 216–233.

Byrne, D. and Callaghan, G. (2013) Complexity theory and the social sciences: the state of the art, New York: Routledge.

Chang, C. W., Tseng, T. H. and Woodside, A. G. (2013) 'Configural algorithms of patient satisfaction, participation in diagnostics, and treatment decisions' influences on hospital loyalty', *Journal of Services Marketing*, 27(2), 91–103.

Choi, T. Y. and Krause, D. R. (2006) 'The supply base and its complexity: implications for transaction costs, risks, responsiveness, and innovation', *Journal of Operations Management*, 24(5), 637–652.

Crié, D. and Chebat, J. C. (2013) 'Health marketing: toward an integrative perspective', *Journal of Business Research*, 66(1), 123–126.

Fiss, P. C. (2007) 'A set-theoretic approach to organizational configurations', *Academy of Management Review*, 32(4), 1180–1198.

Fiss, P. C. (2011) 'Building better causal theories: a fuzzy set approach to typologies in organization research', *Academy of Management Journal*, 54(2), 393–420.

Flint, D. J., Blocker, C. P. and Boutin Jr., P. J. (2011) 'Customer value anticipation, customer satisfaction and loyalty: an empirical examination', *Industrial Marketing Management*, 40(2), 219–230.

Gigerenzer, G. (1991) 'How to make cognitive illusions disappear: beyond "heuristics and biases"', *European Review of Social Psychology*, 2(1), 83–115.

Gigerenzer, G. and Brighton, H. (2009) 'Homo heuristicus: why biased minds make better inferences', *Topics in Cognitive Science*, 1(1), 107–143.

Gladwell, M. (2006) The tipping point: how little things can make a big difference, New York: Little, Brown.

Greckhamer, T., Misangyi, V. F., Elms, H. and Lacey, R. (2007) 'Using qualitative comparative analysis in strategic management research: An examination of combinations of industry, corporate, and business-unit effects', *Organizational Research Methods*, 11(4), 1–32.

Greckhamer, T., Misangyi, V. F., Elms, H. and Lacey, R. (2008) 'Using qualitative comparative analysis in strategic management research: An examination of combinations of industry, corporate, and business-unit effects', *Organizational Research Methods*, 11(4), 695–726.

6 Concluding thoughts and future research

The starting perspective of our book was from under a B2B marketing umbrella; however, in the context of B2B, because firms enter into relationships with suppliers, wholesalers, retailers, service providers and customers, we decided to integrate this perspective with the domain of supply chain management. In fact, one of marketing's main concerns is delivering value to the final customer, but an inefficiency or mistake anywhere within the supply chain (i.e., products out of stock, poor performance by a 3PL, damaged goods, longer lead time, returns products) can have a significantly negative effect on the final result. Therefore, this might reduce customer satisfaction and loyalty. Thus, we proposed to analyse the dimension of customer loyalty adopting a strong integration between supply chain performances and marketing results in enhancing this dimension.

In essence, our book provides evidence that customer loyalty cannot be accurately explained without acknowledging the complex reality in which this variable manifests itself, particularly in a supply chain context. Business scholars have long proposed that firms with a good understanding of the sources of customer loyalty can gain market advantages such as increased revenues, lower costs and increased profitability, to name a few. Successful firms have realised the importance of customer loyalty, and are investing significant resources in customer retention, investigating both customer attitude and customer behaviour. In parallel, competition among enterprises has evolved with the result that supply chains compete against each other because the challenge is not only to serve the global customer in the best way possible but also to select the best suppliers. Globalisation has set up large systems of trading partners that span vast distances, different cultures, several operational risks and increased complexity. Those dynamics affect the efficiency (i.e., cost reduction, quality) and effectiveness (i.e., customer service, delivery time) of supply chains designed to create time, place and form utility to improve the customers' commitment. In considering the challenges the firm faces with respect to global supply chains, demand and supply integration (DSI) provides a basis for understanding the problems the firm faces, as well as a means for guiding future research with respect to customer loyalty within the global context. The complexity also requires inter-functional integration between marketing, sales, logistics, operations, accounting, finance and legal within a firm, and inter-firm coordination across the supply chain.

This is helpful to balance demand and supply constraints, capabilities and opportunities. The ability to create value often rests on the necessity of cross-functional integration and collaboration across the supply chain to improve the level of trust, commitment, LSQ and satisfaction. This requires firms to transcend the functional silos, shifting towards a cross-functional approach to value creation. These are relevant issues when looking for the most appropriate recipe to keep customers loyal. Future research needs to be especially focused on aspects of functional integration and DSI with respect to customer loyalty. Moreover, we invite scholars to explore more broadly the role of individuals across multiple functions in supplier and customer organisations who engage in creating a higher commitment.

In the real world, relationships between variables can be non-linear, so it was important to show how firms participating in B2B markets can achieve high levels of customer loyalty under different configurations of several variables. We have provided the reader with several examples in the previous chapters. Starting with more 'standard approaches', using MRA we gave some empirical examples of how loyalty has been affected by multiple drivers. Our aim was not to include all the possible statistical methods that the literature usually adopts to investigate such relationships, so we are aware that other ones could be used to provide a richer examination of linear relationships. SEM is one such method, and one of the most used in the literature, so scholars could also consider this approach when making a comparison between symmetric and asymmetric relationships.

After this, we contextualised the most recent methodological techniques to capture better the complexity under which firms must operate, giving some examples of data analysis that provide combinations of antecedents that lead to loyalty. In brief, the relationships between customer loyalty antecedents and loyalty can be non-linear with abrupt switches, and the same antecedent can, in certain circumstances, have a different impact on a specific outcome. To demonstrate this, we adopted contrarian analysis, which highlights the existence of contrarian cases that have opposite results on the same outcome. As such, our results indicate that despite the long tradition of customer loyalty research, because of the past methodologies employed and the complexity of the phenomenon, significant work remains to be done to develop a better understanding of how firms can achieve customer loyalty across the supply chain.

This book also shows how firms can achieve high levels of customer loyalty under different configurations of loyalty constructs in a supply chain context. In doing so, we selected some antecedents and we analysed through the QCA approach the existence of several solutions that lead to high levels of customer loyalty. Then, we are aware that our intent was to demonstrate only how to adopt and use this method and not to be exhaustive in including all the possible antecedents of customer loyalty. As such, one limitation of our study is that we considered a limited number of factors linking with the products flow that can affect customer loyalty. Future research could consider other possible combinations and explore how the impact of these antecedents on customer loyalty changes when other variables are considered.

Complexities can arise when the customer-supplier relationship involves an overabundance of exchanged goods and services with varying levels of switching costs and service. We avoided discussing the role of incentive programmes in building loyalty because relational strategies such as LSQ or value creation have better results, as we have demonstrated in our book. Future research should attempt to develop a better understanding of how inter-product and inter-service dependencies would impact the relationships examined in the current study.

Qualitative research could help reveal a more in-depth perspective regarding the relationships of interest, exploring mechanisms and contexts related to why, how and when customer satisfaction leads to customer loyalty, and then related to firms' financial performance. This confirms another limitation of this book, as we did not include a demonstration of 'standard' qualitative methods (i.e., case study or grounded theory) that are useful to analyse a deep and complex phenomenon of customer loyalty. If future scholars were to do so, they could show how results from interviews can also be elaborated and analysed through QCA. Few studies have already done such analysis and a very recent research provided a major contribution on how conducting qualitative comparative analysis starting from interviews' results (Forkmann et al., 2017). Consistent with complexity theory, future research employing a qualitative approach could better understand the complexity within which the phenomenon of customer loyalty manifests itself and how to anticipate the first silent disloyal signals. Such an approach could further aid future research because it could help identify additional potential antecedents or factors that impact customer loyalty and disloyalty.

We also encourage future research that would unpack the complex interactions between value, satisfaction and attitudinal or behavioural loyalty to understand better the different recipes for different segments of customers. The value of loyalty to a supplier depends on the composition of the customers and their relative level of loyalty. Therefore, it could be helpful for managers to understand different customer types and to develop specific strategies for managing customers. Longitudinal research could help reveal a more in-depth perspective regarding the relationships of interest and how loyal customers change over the time.

Future research ought to replicate this study's findings and method across emerging markets to establish further the validity of the method. In connection with this, research stream results may be different in countries with unique cultures, habits and business practices. Accordingly, research should be undertaken to gain more understanding of B2B loyalty effects associated with switching cost perceptions and suppliers' capabilities with respect to national characteristics and cultural distance in the context of the global market.

With the particular attention it pays to the rapid emergence of omnichannel retailing, we hope this book can contribute to the existing literature on customer loyalty. The presence of online versus offline marketing channels has increased the importance of discovering how to manage supply chains effectively across different retail channels and of addressing consumers' emerging needs.

It would be interesting to consider the dynamic environments in which most firms operate. Moreover, it would be interesting to examine the role of the new technologies in the era of Industry 4.0 to build smart supply chain networks. Therefore, scholars interested in collaborative supply chain technologies should explore the potential benefits of increasing the variety of technology collaborations using business analytic tools.

In addition, from a customer perspective, the growing complexity across the supply chain is particularly salient as omnichannel retailing evolves to include more consumer touchpoints that demand building smart and fit strategies into the supply chain. This includes building relationships between suppliers and customers in the B2B context, with a major focus on end-to-end integration, from the supplier's supplier to the customers' customer. The consumer, who will buy, use and wear the product, is the last aspect of supply chain integration. Thus, supplier-manufacturer-customer relationships are crucial to the success of shopper marketing execution, requiring a rethink of supply chain design, logistics network distribution and inventory management, from both consumer and supply chain perspectives. Future research needs to investigate how to integrate research on loyalty in the B2B context with consumer loyalty; one of the most intriguing aspects of future research will be a comparative approach to customer loyalty in B2B and B2C contexts, which could lead to cross-fertilisation between the two areas, with each retaining its own features.

Reference

Forkmann, S., Henneberg, S. C., Witell, L., & Kindström, D. (2017). Driver Configurations for Successful Service Infusion. *Journal of Service Research*, in press, doi: 10.1177/1094670517706160 .

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