Examination of the Feasibility of the Multichannel Strategy within a B2B Complex Product Context

A case study on ABB Control Systems within Industrial Automation Division

Jia Du
Abstract

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The aim of this study is to examine the feasibility of the multichannel strategy in a B2B complex product context through an in-depth case study on ABB control systems. Firstly, the study focused on investigating the channel strategy for the current ABB control systems. Channel structure and sales cycle have been identified. Secondly, the study identified the challenges which have existed in the channels for ABB controls systems. Channel conflicts and lack of channel integration have been recognized as the major challenges. Finally, the thesis proposed improvement suggestions on how to reduce channel conflicts and increase channel integrations for ABB control systems.

Keywords: channel structure, multichannel, channel conflict, channel integration, complex products.
Acknowledgment

It has been an exciting and challenging journey and it was a great honor to work for the ABB Industrial Automation in Västerås. Firstly, the thesis has got tremendous help from Anders Grinneby and Julia Nielsen, who were the area sales manager and factory sales manager of the ABB control technologies. They offered me frequent consultancy and gave me great motivation when I need help on my work, and without their strong support and assistant, the thesis will not have a complete version. Moreover, ABB offered me a desk and company computer, which created a place where I can focus on my working. They also allowed me to access the internal website, which provided me rich internal material as the data source of my thesis. Secondly, I would like to thank you for all the participants of the interviews. Thank you for all your time and great help for my data gathering. Finally, I would like to give the great thank you for my subject reader Sofia Wagrell at Uppsala University. She gave me the best support, and without her careful guidance and corrections, I will not go more in-depth for my thesis. It was great and challenging experience working with all of you, and thank you again for all your great support!

Västerås, Sweden, 27th May 2019

Jia Du
Popular Science Summary

In the industrial world, people always talk about supply chain management. But what is supply chain management? Most of the people think it is about management of the ‘suppliers’ which provide raw material or other essential components of products to the customers. However, supply chain management also includes the downstream supply chain management, so called ‘channel management’; it specifically refers to the phase from finished goods until the end customers. Without appropriate channel strategy, companies will damage their businesses and cannot reach the targeted customers.

Moreover, what is multichannel strategy? Multichannel strategy means a firm uses multi-channels to reach out the end customers. Nowadays, the booming of the internet shopping leads to that people in B2C world care about the multichannel more than B2B world. However, the studies regarding B2B multichannel strategy have not drawn enough attentions. Moreover, researches in terms of complex products utilize multichannel strategy is even less. Therefore, this study draws the attention to this particular condition, multichannel strategy in a complex product context. The value to study this topic is due to interplay between complex products and multichannel strategy. It is interested to see what multichannel strategy will perform under this circumstance.

The thesis work conducted an in-depth case study in ABB controls systems which provided an exact circumstance: multichannel strategy is utilized in the complex products – control systems. The study of the challenges, struggles of this huge company has great implications to other companies with similar situations.

Hope this study can provide some useful insights to help the companies who are struggling with multichannel strategy and improve their situation.
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1 Introduction

1.1 Background description and analysis

The globalization, internet-based e-commerce, and the intense international competition have made the marketing channel management more challenging and complicated than ever before (Rosenbloom, 2006). The increased channel options allow companies to choose different channels to reach their customers. As a result, the multichannel strategy becomes a significant trend for the business to business marketing since it provides increased levels of customer choice and service via a wide array of different channels (Rosenbloom, 2006). Ideally, the companies can serve the customers most effectively and efficiently and reaching as many customers possible through an optimized channel combination. Studies show that multichannel users buy more products from the firm (Sharma & Mehrotra, 2006) since the additional channels provide more points of contact for customers to gain access to the firm's products (Rosenbloom, 2006).

However, despite the increased channel options making the companies able to reach more customers, it also brings challenges. Notably, the giant multinational companies such as ABB are struggling with the integration of the multichannel and optimization of the channel mix since managing international operations presents a complex and challenging set of tasks (Mohamed & Youssef, 2004). The channel strategy is crucial for the multinational corporation since the selection, and the structure of the channels have a significant effect on the international marketing strategy. Also, once a channel has been set up, it will be difficult to change it due to the disturbance of customer loyalty (Ramaseshan & Patton, 1994). Moreover, the multinational firms are facing a choice between either primary captive agents (company salesforce and company distribution division) which is an integrated channel or primarily independent intermediaries (outside sales agents and distributors) (Anderson & Coughlan, 1987). The former option gives the manufacturer more control power over the channels. Besides these, other factors, for instance, the different geographic regulations, customer preferences, and so forth also increased the uncertainty of the channel strategy within the international context. Under this dynamic situation, it is crucial to study the multichannel management for the B2B multinational companies.

Rosenbloom (2006) summarized several main issues that corporations are facing with a multichannel strategy, and they are including multi-channel integration, channel mix optimization, conflict in multiple channels, channel tradeoffs, and financial performance. Lacking integration of the multi-channel will only bring the low added value (Sharma & Mehrotra, 2006) while wide range of channel choices and potential combinations means that the firm faces a challenge when formulating the optimal channel mix (Rosenbloom, 2006). Furthermore, channel conflicts are also one of the drawbacks of the multichannel strategy. Sharma and Mehrotra (2006) has mentioned that there are two typical disadvantages of adopting multichannel strategy, which are making firms struggling. First, multiple channels can create conflict that may dissuade some channels' members from carrying the firm's product. Second, with an increased number of channels carrying the product, the sales derived from each new channel will decline, thus making it difficult for a firm to recover its costs. Kevin and Lambe (2007) also said perhaps the most significant
obstacle to building successful multi-channel strategies is the emergence of conflict between the different channels used for reaching customers. The channel conflicts occur easily when the firm owns extensive channels which are serving the same clients. The same situation also could arise within the internal channels of the firm (Sharma & Mehrotra, 2006). Particularly the conflicts will escalate in a situation of ‘free rider’ when one channel member provide the inquiring service to the customers, but another channel gets the order from the customers due to the lower price as such (Sharma & Mehrotra, 2006). The estimated data shows that 20% of the customers are free riders. In this case, the manufacturers either implement costly conflict reduction mechanisms or face the costs of conflict which bring no benefits to the firms. (Vinhas & Aderson, 2005). How to solve this situation and achieve an optimal channel solution, Albert sa vinhas (2005) suggested that firms can reduce such conflicts to differentiate each channel's offerings and setting 'rules of engagement' and establishing compensating mechanisms to each of the channel members. The “low return” problem of multichannel strategy, occurs when a new member joins the channel, and is always facing lower sales than the existing members due to low-hanging fruits are picked first. In addition, there is sales cannibalization with enhanced coverage that reduces the sales of both existing and new channel members (Sharma & Mehrotra, 2006).

As a multinational company, ABB is facing challenges on their multichannel strategy as well. ABB is a leading technology innovator in electrification products, robotics and motion, industrial automation and power grids, and serving customers in utilities, industry and transport and infrastructure globally (ABB, 2017). It has a history of over 130 years, and it is ranking #8 on Fortune Magazine's list of companies that are "changing the world" (ABB, 2018b). By 2017, ABB had expanded its business in more than 100 countries with around 135,000 employees. Due to the time limitations, this study is only focusing on the control system within the industrial automation division (IA) of ABB and only for Nordic Europe market. In the fiscal year 2017, the IA division accounted for 19% ($6.9 billion) of the total revenue of ABB and the electrification products gave the most revenue with a 10.1 billion US dollars of total 34,312 million US dollars (29%) (ABB, 2017). Despite the IA division being the smallest part of the entire ABB, it is predicted to grow rapidly.

As the study object of complex product - ABB Control system, is the main product of the IA division. It serves a wide array of customer-segments by providing variable system solutions which can keep data from the manufacturing process together with other information systems within the company and make information available in real time (ABB, 2018a). More precisely, the control systems create a platform to integrate and automation control of all the functions of a plant including process, power management, electrical and safety in the same redundant, reliable system (ABB, 2018a). The represented product is Ability™ System 800xA which is a crucial product driving the growth of the IA division. Besides, the global market for the control system is approaching 16 billion USD, and ABB retained its world number one share with 20% for the 19th year (ABB, 2018f). Apart from the systems, ABB control systems also offer a full range of lifecycle services for the different systems according to specific customer needs. In general, the service ranges from spare parts supply, maintenance, training, and technical support to upgrade to help customers achieve a better lifecycle, more efficient process and excellent operation (ABB, 2018e).
Moreover, ABB control systems is using a channel strategy which supplies the product through different channels. The channels include internal business units and ABB service units, which are direct channels to the end customers. The external third-party intermediaries are instead indirect channels to the industrial customers. It deserves to be mentioned that ABB owns a channel program, which is called Value Provider Program it offers sales support, service and engineering in close cooperation with ABB to the third-party intermediaries including distributors, technical distributors, system integrators, panel builders and service providers (ABB, 2018g). To get enrolled to this program the distributors need an authorization from ABB to be able to provide ABB products and services to the customers. This strategic alliance is one of the essential moves that ABB is taking to increase the coverage of the customers.

However, some problems occurred during the implementation of the multichannel strategy. For instance, due to the fact that the internal ABB channels sometimes sell the same products to the same customers as the external third parties, channel conflicts arise. These conflicts in turn influence the effectiveness of the channels. Furthermore, the complex channel mix led to an unintegrated channel strategy with lacking cooperation and communications throughout the channels. Moreover, because of the complex attribute of the control system, it complicates the channel management from another dimension. Researchers have studied that the primary attributes of the complex products are high value and high level of customization (Hobday, 2000). Control systems have the exact same attributes, additionally, the long-life cycle (at least 20 years) of the control system requires the extensive and long-life aftermarket service which is one of the most important profit drivers of the control systems. Besides, the marketing of complex products and systems requires an extensive exchange of information along the marketing channel, and it needs the system integrators and value-adding resellers that are more adapt at transferring complex knowledge than the traditional resellers (Wuyts, et al., 2004).

Moreover, from the perspective of the macro level economic change which motivates this study, the fourth industrial revolution is coming, and it is driven by robotics, artificial intelligence, fifth-generation wireless technologies (5G), additive manufacturing/ 3D printing and fully autonomous vehicles, and so on (Myers, 2019). Under this megatrend, the market is undergoing a profound shift (ABB, 2017) and it needs advanced digital solutions which is exactly what ABB is trying to implement. In 2017, ABB launched ABB Ability™ platform which is an innovative solutions-based digital platform offering more than 210 solutions to meet the customers’ variable needs (ABB, 2017). By utilizing this specific product as the center strategy, ABB offers customers high-value-added solutions to explore the unique position in the market (ABB, 2017). Therefore, due to the significant position of the control system within ABB, it is important for the company that the channel strategy is successful.

Nonetheless, the topic regarding the multichannel strategy in a complex products context has not been studied extensively in the previous research even the multichannel strategy has been studied and applied to B2B marketing for decades. The study is striving to fill in this gap. Moreover, the multinational corporations are still facing complex challenges from different aspects and degrees on this topic. Therefore, the aim of this study is trying to
bring practical as well as academic contributions to this area by conducting a case study about ABB’s complex product - the control systems. The expected outcome for the thesis could be providing practical implications to other similar cooperation, which are utilizing multichannel strategy in a complex product context.

1.2 Study Purpose and Research questions

The objective of the paper is to examine the feasibility of a multichannel strategy in a B2B complex product context. In order to address this issue, an in-depth case study on ABB control system sector has been conducted. The expected outcomes are the improvement suggestions which can contribute to the optimization of ABB channel strategy as well as the practical implications to other B2B complex product firms from an academic point of view.

A thorough literature study has been carried out first in terms of the multichannel strategy and the challenges. Then, the case study on ABB control systems has been conducted and the process could be described as three steps: firstly, an investigation regarding the implementation of ABB’s channel strategy process has been carried out. The study focused on mapping the channel structure. Secondly, the problems which ABB control system has encountered during the implementation process of the multichannel strategy were identified. The study concentrates on the channel conflicts and channel integration issues. Thirdly, analysis of the empirical data with the theoretical framework to strive to provide some suggestions which can contribute to the improvements of ABB control system channel strategy as well as practical implications for other B2B multinational firms in a complex product context.

Based on the purpose of the study, the main research question is:

**RQ1: How can ABB control systems use multichannel strategy more effectively in a complex product context?**

In order to answer this question, two sub-questions have been raised:

**Rq 2: How does ABB control system implement the multichannel strategy?**

**Rq 3: What kinds of problems does ABB encounter for their channels in terms of control systems?**

1.3 Boundaries and Limitations

The study aims to provide some practical applications of multichannel strategy in B2B complex product context. However, due to the time limitations, the study only focuses on the case study of ABB control systems within industrial automation industry. Additionally, the case study only concentrates ABB control system sector for Scandinavia (Finland, Sweden, Denmark, Norway) markets due to the mega size of ABB globally and the full range of products it offers. Apart from this, the challenges which are existing in ABB channel strategy for the control systems are variable and fragmented. Therefore, this study only focuses on channel conflicts and channel integrations these two major issues.
2 Theoretical Framework

The theories that will be utilized to analyze and investigate the research questions are introduced in this section. Firstly, a holistic view will be taken regarding the distribution channels and multichannel strategy. Secondly, the challenges which occur in the multichannel strategy will be explained. The focus will be channel conflicts and the discussion regarding the influence of the complex products to the supply chain.

2.1 Distribution Channels

The distribution channels are the downstream of the supply chain management and the upstream are the production chains (Lamming, et al., 2000). This positioning determined that supply chain management is integrating the “dependent trading activities, organizational actors, and their resources into chains linking the point of origin and the point of final consumption” (Ellis, 2011, p. 106) while distribution channels are only focusing the downstream of the supply chain that matching finished goods to customer needs (Ellis, 2011).

Dibb, et al. (2012) defines channel or distribution as “a group of individuals and organizations that direct the flow of products from producers to customers." Channels are crucial for customer satisfaction and it is the driving force for it. The channel needs to be designed to match the marketing goals (Hutt & Speh, 2010). The business marketing channel has variable tasks which need to be accomplished, includes making contact with potential buyers, negotiating, contracting, transferring title, communicating, arranging to finance, serving the product and proving local inventory, transportation, and storage (Hutt & Speh, 2010). The fundamental question of channel management is how to assign the tasks and distribute them accordingly to the channel members or by the manufacturer itself (Hutt & Speh, 2010). Appropriate marketing channels can serve the products to the customers at the right time, in the right place and the right quantity (Dibb, et al., 2012). Therefore, identifying optimized marketing channels is a significant issue for marketers. Many entities are involved in channels which including manufacturers, intermediaries and end-users generally (Palmatier, et al., 2015).

The marketing channel has a range of channel functions that "constitute a process, flowing through the channel systems that are performed at different points in time by different channel members." (Palmatier, et al., 2015, p. 12). Ellis (2011) summarized four significant tasks of the distributional channel including reducing complexity, increasing value, transaction efficiency and the quality of service. Firstly, reducing complexity refers to the marketing channels that enable the manufacturer to reduce the market interaction complexity and accomplish an exchange with each customer efficiently. Secondly, optimized utilization of intermediaries can increase the added value by serving customer needs efficiently. Thirdly, the channel members attempt to achieve routinization/
standardization of transaction process, for instance, regulating order size, delivery cycles, payment frequency and so on. Standardization can increase the transaction efficiently. Finally, the distribution channels provide the service such as specialist training of end-users, frequent deliveries and so on which bring considerable value to the customers.

**Types**

Dibb, et al. (2012) classified channels into two major categories, "channels for consumer products/services or channels for industrial, business to business products/services." Dibb, et al. (2012) concludes the channels for B2B products or service mainly including the four most common types as shown in figure 1, here below. Type E illustrates the direct channel which does not have intermediaries between customers and producers. This type of channel is utilized extensively in the complex products which own fewer customers meanwhile needs high extend customization. Type F illustrates industrial distributors who are the intermediaries between industrial customers and producers. Type F has mainly been applied in situations where the products has large numbers of customers and they distribute broadly. By using industrial distributors, the products can be stocked and serviced easily and rapidly to the customers. Type G illustrate the channel type which has agents between producers and customers. It mainly used in the situation when a company is in a small size and does not have enough salesforce or enter a new market without using its own sales force. Type H refers to the channel type which the products flow to agents then to industrial distributors to the end customers. This type of channel is used commonly when the products are purchased in small quantities and frequently.

![Diagram of marketing channels](image)

*Figure 1. Typical marketing channels for industrial or business to business products (Dibb, et al., 2012)*
2.1.1 Multichannel Marketing Strategy

Dibb, et al. (2012) gives the definition of multichannel which is “the decision to reach target consumers or business customers through more than one channel." Business-to-business marketers have used multichannel strategies to reach their customers, customers were typically categorized based on needs, and channels were thus developed based on customer needs. In general, companies tend to use small dealers or distributors for small customers, salesforce or value-added resellers for medium-sized customers, and key account salesforce for large customers (Sharma & Mehrotra, 2006).

As illustrated above, industrial products/services are supplied in different types of channels. However, in order to cover as many as diverse customers, different channels are applied simultaneously in many big corporations. Multichannel marketing is the “decision to reach target consumers or business customers through more than one channel” (Dibb, et al., 2012, p. 424). In general, corporations tend to use a single, primary channel to market and turn to their other channels only as secondary to avoid channel conflict and confusing customers (Palmatier, et al., 2015). In addition, due to the fragmented markets and the intensive competition, the multichannel strategy became a norm for the current marketing, since the single channel cannot provide sufficient services and products to the customers (Palmatier, et al., 2015). Palmatier, et al. (2015) states that this strategy can benefit both suppliers and customers. From suppliers’ perspective, multichannel can increase their marketing coverage due to the increased contact points for the customers meanwhile it can raise the entry barriers to the potential competitors since it is difficult to imitate the same multichannel strategy (Palmatier, et al., 2015). In terms of customers, the multiple channels provide them a variety of chances and routes to purchase the products as the most appropriate way.

Moreover, Webb and Hogan (2002) summarized four main points that firms can benefit from the multichannel strategy. First, it allows firms to be more adaptive, and they can respond to customers’ needs rapidly. Secondly, the multiple channels can provide a variety of options to different products to serve the best while the single channel unlikely capable of satisfying customers' different needs. Thirdly, companies can find another channel in case of the current channels are saturated. Finally, additional channels enable companies to target the markets more precisely, thereby improving competitiveness.

The multichannel strategy is a mix of direct, indirect channels as well as a range of different intermediaries (Ellis, 2011). Therefore, the channel structure is an essential factor which needs to be considered. In general, appropriate channel length and breadth are the main factors for designing channel structure (Ellis, 2011). Channel length refers to the number of levels in the channels while channel breadth means the numbers of each type of intermediary to be used and greater breadth indicates greater intensity (Ellis, 2011). Generally, higher customer density which needs greater channel intensity. However, for the complex, technology-intensive products, the channel breadth is selective or exclusive due to it requires specialist intermediaries who can provide technical support (Ellis, 2011). Payne and Frow (2004) also explained this point more detailly. They provide a simple map to classify the different channels are used in what kinds of situation. The classification is
based on the cost of sale and the complexity of the sales as below figure 2 shows. In general, in the case of the complex sales which need face to face interactions with customers, the field account management is one of the options to meet the requirement. On the other hand, it is also most costly way to deal with customers (Payne & Frow, 2004). However, for the same key customers, there are some less-complex tasks which could be handled by lower cost channels such as internet, phone call or emails as such. Desk-based account managers refer to the people who can involve a highly experience sales person in a short notice and this sales person can deal with customers in a highly interactive and customized ways (Payne & Frow, 2004). In the case of commodity sales or some other routine sales, service and queries, the tele-marketing and internet could be the primary choices (Payne & Frow, 2004). Overall, different channel alternatives have different challenges and advantages, it needs the deep analysis to each element of customer interactions to make sure the optimized channels have been chosen (Payne & Frow, 2004).

![Figure 2. Channel alternatives based on cost and the complexity of sale (Payne & Frow, 2004)](image)

**Organization buying classifications**

Apart from above, the organization buying classifications also influence the choice of the channels. According to Ellis (2011), there are typically three buying classifications: straight rebuy, modified rebuy and new task. Straight rebuy refers to the repeat purchasing without any modification of the products and the supplier chosen depends on the previous purchasing satisfaction. This kind of routine buying can be served from online or from distributors to reduce the purchasing time and cost. The second type, modified rebuy refers to the situation which needs some customization for prices, product specifications or delivery time, and so on. In this case, it needs the firm has more experience in the involved products. The last type is the new task purchase which means the buying is the first time from the customer. In this case, the customer has typically no experience for the supplier.
capabilities, and performance and the decision-making process is longer. Moreover, it needs more technical support and sales involve from the manufacturers to satisfy customer needs since it needs more knowledge about the products.

**Sales cycle**

As below figure 3 shows that typically there are several selling tasks within one sales cycle: lead generation, lead qualification, bid & proposal, negotiation/sale closure, fulfillment and post-sale support & care (Friedman, 2002). For instance, a company may use call or email to trigger the sales and generate the leads, then send the field sales to make a close move with the customer and the business partners provide the fulfillment (Hutt & Speh, 2010). In a multichannel strategy, the different tasks in a sales cycle could be executed by the different channels according to the needs of the customer segments over the life cycle and to maximize the added-value to the customers (Payne & Frow, 2004).

![Typical Sales Cycle](image)

**Figure 3. Typical sales cycle: tasks performed throughout the sales process (Adapt from Friedman (2002, p. 234))**

**Lead Generation:** In this phase, the goal is triggering a potential opportunity from customer. It can be a result from a phone call, or customer query from website, and so on. (Friedman, 2002)

**Lead Qualification:** after the initial contact with customer, within this phase the customers qualify the probability for the business. This qualify could include mainly four aspects: the products information or service, buying interest, funding and timeframe. If this phase failed, the purchase probably will not continue or must back to the ‘lead’ phase. (Friedman, 2002)

**Bid & Proposal:** in this step, it converts the previous all the tasks into a ready-to-close sale. The activities in this step could be the identify the specific customer needs, development
the product specification according to customer requirements and preparation the written proposals with many documentations. Especially in the complex business sales, this step could be the most time-consuming and complex part of the entire sales cycle (Friedman, 2002).

**Negotiation/sale closure:** this task contains the negotiation of the prices, terms and purchasing conditions. After the negotiation, it is followed by finalized payments or a binding contract has been signed. (Friedman, 2002)

**Fulfillment:** in this step, normally it includes delivery of the products or solutions. In some complex sales, it may include extensive configuration, customization and installation. (Friedman, 2002)

**Post-sale support & care:** after the fulfillment step, it comes into the post-sales step which refers to support, training and care the post-sale problems for the customers. The aim of this step is to achieve long-term customer satisfaction, loyalty and growth. (Friedman, 2002)

### 2.2 Challenges to implementing multichannel strategy into B2B marketing

As mentioned previously, the multichannel strategy has already become a trend of the B2B business after decades of development. However, such a wide range of choices and combinations also indicates that companies face many challenges to formulate the optimized channel mix meanwhile avoiding channel conflict (Rosenbloom, 2006). Rosenbloom (2006) summarized several essential issues that firms are facing right now, and he states that the overriding question is “how do firms utilize the multichannel strategy to foster channel confluence and synergy rather than conflict?” In order to address this question, multichannel integration, channel mix optimization, conflict in multiple channels, channel tradeoffs and financial performance of the multiple channels are the main aspects which need to be studied (Rosenbloom, 2006). Apart from this, Rosenbloom (2006) identified several other important issues about multichannel. It includes e-commerce and multichannel strategy, reaching more customers via multichannel strategy, finding the optimal channel mix, synergy and multichannel strategy, strategic alliances and multichannel strategy, sustainable competitive advantage and multichannel strategy and conflict and multichannel strategy. Within these many issues, this study is focusing on channel conflict and multi-channel integration two major aspects.

#### 2.2.1 Channel Conflicts in the multi-channel strategy

Channel conflict has been studied for decades by numerous scholars and the definitions are variable as well. Overall, the marketing channel conflict has been taken as a social system subject to the same behavioral processes characteristic of all social systems (Rosenbloom, 1973).

Palmatier, et al. (2015) described that Channel conflict is a state of opposition, or discord, among organizations in a marketing channel. The word ‘conflict’ is originally from Latin ‘conflicgere’ which refers to some negative connotations such as contention, disunity, disharmony, argument, friction, hostility, antagonism, struggle, and battle (Palmatier, et al.,
Gaski (1984) also defines that conflict refers to “tension between two or more social entities (individuals, groups, or larger organizations) which arises from the incompatibility of actual or desired responses.” Moreover, according to Ster and El-Ansary (1977), channel conflict is “a situation in which one channel member perceives another channel member to be engaged in behavior that is preventing or impeding him from achieving his goals” (Gaski, 1984). However, channel conflict is not necessarily a negative effect all the time. Some extent of channel conflict can strengthen and improve channel performance as long as the channel manager deals with it effectively and appropriately (Palmatier, et al., 2015).

2.2.1.1 Causes of channel conflicts
Channel conflict arises “when one member of a channel views its upstream or downstream partner as an adversary or opponent these interdepend parties, at different levels of the same channel (upstream and downstream) contest each other for control.” (Palmatier, et al., 2015). In a multichannel situation, the channel conflict arises similarly but more intensively. Since multiple channels provide the customers with more choices and customer can choose a low-price channel. Notably, it always leads to an in the free-ride situation which refers customers get advice from one channel member but purchase the products from the discount catalogs (Palmatier, et al., 2015). It triggers the channel conflict between different channel members. Moreover, the individual channels always have conflicting goals and resources are limited which leads to channel conflict in another way (Webb & Hogan, 2002). From the power, conflict perspective, Gaski (1984) states that power is the causative factor with respect to conflict since the channel member who has more power always tend to control the behavior of subordinates or other channel members.

Kiran, et al. (2012) mentioned there are mainly three causes of the channel conflicts: goal incompatibility, domain dissensus, and differing perceptions of reality.

Goal incompatibility: It refers to the goal of one channel member is not compatible from other members. Profit margins, competitions from the alternative channels and access to product supply could be the reasons which lead to the incompatible goals between channel members (Kiran, et al., 2012).

Domain dissensus: The differences in the domain definitions in the channels can also lead to channel conflicts. There are four critical elements of a channel domain are the “population to be served, the territory to be covered, the functions or tasks to be performed, and the technology employed” (Kiran, et al., 2012).

Differing perceptions of reality: the last main cause of the channel conflict is the differing perceptions of reality which is often caused by the poor communication among channel members. It often leads to the disharmony actions towards to the same situation and lacking of good cooperation among channel members (Kiran, et al., 2012).

2.2.1.2 Types of channel conflicts
There are several types of channel conflicts are existing due to the different causes. Palmatier, et al. (2015) identifies the channel conflicts including latent conflict, perceived conflict, felt (or affective) conflict and manifest conflict. The extent of the conflicts is
increasing by this order, latent conflict has the least influence on the channel performance. In contrast, manifest conflict has a severe impact on channel performance. According to Palmatier, et al. (2015), latent conflict refers to the inevitable potential conflicts within the channel members due to that different parties pursue separate goals and strives to their own economic goals meanwhile competing for the limited resources. This kind of conflict cannot disappear because of the interdependency between the parties. However, if it is dealt with improperly, this kind of conflict may escalate into active oppositions particularly in the situation of new initiatives launching. Perceived conflict occurs when a party feels the opposition of viewpoints, sentiments, interest or intentions. This kind of conflict is cognitive, emotionless and mental. The felt (or affective) conflict arises when the emotions become the main factor. The reason for this kind of conflict is variable, but the outcomes are similar. The negative emotions are dominant such as tension, anxiety, anger, frustration, and hostility. The conflict may result in economic damage when the emotion reaches a breaking point, and the parties try to punish their channel counterparts even if it means they will sacrifice their own benefits. The last one is manifest conflict which is the most severe conflict. This kind of conflict is expressed in visible ways such as blocking each other's initiatives or withdrawing support and so on. In the worst case that the channel catabolize will happen. However, Gaski (1984) simply summaries “manifest” and “underlying” two kinds of conflicts. Manifest conflict refers to “overt actions” while underlying conflict refers to the conflict which involves “interpersonal attractions, interests and desires” (Gaski, 1984). Besides, channel conflict for the multiple channels also can be categories as the inter-channel conflict which refers to the conflict in one channel between channel members and intra-channel conflict which means the conflicts between different channels.

2.2.1.3 Reduce channel conflicts

*Communication and coordination:* Communication and coordination can give a significant impact of the level of channel conflicts. It is not only important to communicate with the external channel partners, but also among the internal subunits which responsible for managing the various channels (Kiran, et al., 2012). Moreover, the distribution activities cannot be properly managed without the effective internal and external channel communication strategies (Kiran, et al., 2012). It can reduce the channel conflicts which caused by goal incompatibility and differing perceptions of reality by effective communication and coordination internally and externally in the channels (Kiran, et al., 2012). Moreover, the roots of channel conflict are the inherent interdependence of the channel members which is induced by specialized function of each channel members. Therefore, the collaboration of each channel members is essential to accomplish the channel tasks (Kiran, et al., 2012). There are several ways to facilitate the communication and coordination within the internal channel members as well as external channel partners. One way is to establish channel management groups to over all the channels which develop the overall strategic direction for all the channels. It also can help to solve the conflicts between the channels from a high corporate level (Kiran, et al., 2012). This method is aligning with Reve and Stern (1979), they claim that the organization should establish a collective goal among the marketing channels which can serve the best interest of the customers as well as the self-interest organizational goal. This collective goal may not be very explicitly noted sometimes but it points to certain joint benefits for channel members.
Differentiate the products and markets: Vinhas and Aderson (2005) has identified three main approaches for reducing the channel conflicts within the concurrent channels which refers to the firms serve the one geographical market simultaneously by both direct channel and indirect channel. The three approaches including “differentiating each channel type’s products offering, creating and enforcing rules of engagement ex ante (rather than mediating disputes ex post), and compensating both parties that participate in a sale regardless of which one books the order.

Firstly, when a firm is not differentiating the direct channel and indirect channel on the markets and offerings then the major point of differentiation is absent. It leads to more frequent situation as the free riding occurs which is a case that one channel provides presales service or consulting to the customers, but in the end the customers choose the other channel (Vinhas & Aderson, 2005). This kind of situation worsens the competitions and facilitates channel conflicts, eventually lowers the channel performance. Manufacturers should face the cost of reducing conflicts or costs of conflicts (Vinhas & Aderson, 2005). Therefore, the firms should concentrate one of the two channel types rather than focusing both channels simultaneously (Vinhas & Aderson, 2005). There are also other studies show that firms also can choose to target on one of forms (products, services, prices as such) to differentiate the channel focusing to serve different segments. However, due to the order power is handled by customers rather than suppliers, this resolution cannot work when the customers insist on choosing direct channels or indirect channels and suppliers difficult to refuse the orders even from wrong channels (Vinhas & Aderson, 2005). Moreover, the true differentiations should from the perception of customers. If the customers see the direct and indirect channels are offering ‘same’ products, services and prices, it is difficult to differentiate the channels (Vinhas & Aderson, 2005).

Secondly, channel conflicts tend to be more intensive in the low-growth markets because of the fewer business opportunities, the losing of order from either side of the channels, it could become serious ‘anger’ towards the other channel. In the contrast, in the fast-growing markets, the channel can focus on new opportunities or satisfying the current customers rather than obsessing with the lost opportunities (Vinhas & Aderson, 2005). Therefore, firms can utilize the concurrent channels more on fast-growing and more competitive markets.

Thirdly, channel conflicts are more furious on the standardized products offerings. Since in this case, the channels can only compete on the services and prices. Thus, customers are easily to obtain service from one channel and extracting better prices from the low-service channels (Vinhas & Aderson, 2005).

Finally, it is difficult to form the rules to the customers that where they should buy from or which channels, but firms can formulate the rules of the channels to clarify in what kinds of circumstances that one channel can contact with customers (Vinhas & Aderson, 2005).

2.2.2 Complex products and supply chain
There are many definitions of a “complex product”. Sometimes it is referred to as CoPs which implies a product with high value, industrial complexity and complex systems. Hobday (2000) mentioned that the definition of CoPs is ‘high-technology, business-to-business capital goods used to produce goods and services for consumers and producers.
Unlike high volume consumer goods, each CoPS is high cost and made up of many interconnected, often customized parts (including control units, sub-systems, and components), designed hierarchically and tailor-made for specific customers. Due to the property of the involved products, as a result, they tend to be produced in projects or small batches. Additionally, they are regularly involved the direct user in the development process rather than as the commodity goods sell in the arms-length process (Hobday, 2000). Because of these characteristics, the channel management for complex products are more difficult and complicated. In addition, few scholars have studied this issue in a multichannel strategy context.

The nature of the products is one of the most critical determinates for supply chain management. As Fisher (1997) claims that "before devising a supply chain, consider the nature of the demand for your products." Thus, after Fisher classified the demand pattern of the products, he identified two major categories of the product, one is primarily functional product while the other one is primarily innovation product. He states that a supply chain should be designed according to the specific type of products. Functional products refer to the products which satisfy the basic marketing needs, have a long-life cycle, and the demand is stable. This kind of product, in general, has much more furious competition and lower profit margins than the innovative products due to their stability and lack of uniqueness (Fisher, 1997).

In contrast, innovative products have higher profit margins as they have advanced technologies or additional attributes which can attract customers. However, innovative products make the demand unpredictable and have shorter lifecycles since the competitor's imitation (Fisher, 1997). These attributes determinate that functional products and innovative products should have a fundamentally different supply chain. Fisher (1997) concludes that functional products require an efficient supply chain while innovative products need a responsive one. He thinks functional products should focus on the cost-efficient which needs a low-cost supply chain. On the contrary, the innovative products should concentrate speed and flexibility, agility as their priority (Lamming, et al., 2000).

Lamming, et al. (2000) developed this theoretical framework based on Fisher (1997) and they think there are three aspects which give the impact to supply chain management: the degree of product innovation, product uniqueness and product complexity. Due to the difficulty to distinguish the innovative and unique product, they suggest using "innovative-unique" products instead. Moreover, Lamming, et al. (2000) concludes that the level complexity of the products should be another critical factor to influence the supply chain. Complex products refer to the products comprise of many technology-intensive and interrelated components. They find that the high complexity products have a broader upstream supply chain due to large numbers of components while the downstream supply chain is varied. As an outcome, Lamming, et al. (2000) summaries four classifications of supply chains. Higher complexity - innovative/unique products which need to be focusing on speed and flexibility, innovation, quality supremacy; higher complexity – functional products which should strengthen cost reduction, quality sustainability and service, lower
complexity - innovative/unique products which should concentrate speed, flexibility, innovation and quality supremacy and lower complexity - functional products which should compete on cost and service. Overall, the higher complex products have higher supply chain complexity (Lamming, et al., 2000). In other words, the complexity of the products has a negative influence on the integration of the supply chain (Größler, 2015).

Customer Relationships and channel integration

Apart from the supply chain complexity, the complex products also need extensive information flow among the suppliers, intermediary and customers who bring the negative impact to the supply chain integration (Wuyts, et al., 2004). The root cause behind it is that the customers of the complex products always need the extensively customized solutions and extensive technical support, for instance, installations, transfer of applications or training sessions for the customers (Wuyts, et al., 2004). In a result, the intermediaries of the complex products require the higher technical knowledge on the products. Moreover, the strong tie between channel members can facilitate the transfer of the complex knowledge (Wuyts, et al., 2004), therefore it needs much tighter relationship with the customer in terms of complex products. In the contrast, poor communication and cooperation between suppliers and customers of complex products may lead to the installation, technical support delays or problems as well as inadequate design (Wuyts, et al., 2004).

In the current markets, the competitive advantages are not just about selling products and services to the customers but also about delivering the world class service and building long-term and profitable relationships with customers (Payne & Frow, 2004). The good customer relationships are founded by mutual benefits and trust as well as individualized relationships. How to maintain a good, trustful customer relationships is to integrate all the channel activities which in contact with customers to provide the individually, collectively and consistently value propositions to the customer (Payne & Frow, 2004). Therefore, an integrated multichannel is an important factor to establishing long term, trustful customer relationships. On one hand, multichannel strategy could offer customer more choices which can enhance customer satisfaction. On the other hand, if the multichannel cannot provide consistent experience across all the channels which can jeopardize the customer relationships (Madaleno, et al., 2007). Payne and Frow (2004) identifies several issues which need to be considered when formulating an integrating channel management strategy. There are how to achieve the consistency of customers experiences across the channels; how to ensure the coherent and coordinated communication and services which firms offers to customers through all the channels. meanwhile also need to satisfy customer special interest; and how to optimize the resource management across the channels. Moreover, companies should choose to maintain the long-term relationships with the customers who is most profitable. From customers’ perspective that they trust the firms which can offer consistency support and services in a long run (Payne & Frow, 2004).
3 Method

This section introduces the methods used in this study. First, there is an explanation of the methodology which is qualitative research in an abductive approach. Then the data collection methods will be introduced. This study applies semi-structured interviews, literature studies, and the study of documentation for collecting data. By following this, validity, reliability, and bias of the data will be discussed. Finally, the overall ethical issues related to the data collection process will be explained.

3.1 Methodology

This section introduces the utilized methodology in this study, which is a qualitative study in an abductive approach.

3.1.1 Qualitative Research

Qualitative research has been undertaken in this case study. The reason for choosing qualitative research is because this study is focusing on identifying problems and solutions for a complex and specific issue – multichannel challenges. Therefore, ABB controls systems have been chosen as a case to conduct a qualitative research in order to get an in-depth insight into the channel practices from the actors within channels. How the individuals inside the channels interpret the channel practices, and their pains are significant for the study. There are several ways to collect data, which for example includes focus groups, semi-structured, non-structured interviews. In this study semi-structured interviews were conducted together with secondary data retrieved from ABB’s internal documents.

3.1.2 Abductive Study

This study utilized an abductive approach. Abductive is a process that moves back and forth between data and theory iteratively (Timmermans & Tavory, 2012).

The reason for choosing an abductive approach is because this study needs to go back and forth from theory to empirical data and abductive approach is more suitable for this purpose. During the study, the problematization process narrowed down the research area, which focused on the challenges within the multichannel strategy. However, it is unclear what kinds of challenges are most significant within ABB control systems. Thus, it is difficult to identify the theoretical framework for the specific challenges. Therefore, a primary study of the empirical data has been conducted which indicates that the study should be focusing on channel conflicts and the channel integration problems. This primary study helped to identify the theoretical framework, and then the empirical analysis has been conducted. This process has been back and forth several times, eventually, it led to the conclusion.

3.2 Study Methods

The study utilizes semi-structured interviews, a literature study, as well as secondary data in terms of internal company documents.
3.2.1 Semi-structured interviews

Semi-structured interviews were utilized in this study and the interviews were conducted within ABB. According to Bryman and Bell (2011), there are two main types of qualitative interviews; the structured interview and the semi-structured interview. Semi-structured interview refers to that the researcher has a list of guiding questions to cover the related topic, but the interviewees have some extent of autonomy during the interview. Therefore, the interview process is relatively flexible compared to the structured interview and the interviewees have some extent of freedom to interpret and frame the issues or topics (Bryman & Bell, 2011).

The objective of the semi-structured interviews in this study is to collect data which concerns the occurring problems within channels for ABB control systems. The sample group chosen was guided by salespeople of ABB control systems. The chosen interviewees are sales people who interact directly with the customers as well as sales managers of the ABB channel partners (external intermediaries). Furthermore, regarding the sales people who work in the business units and deal with end customers are involved in different business segments such as the Oil and Gas industry, Marine industry, Metals industry, Pulp & Paper, Utilities Power, Mining, Food & Beverage, Pharmaceutical.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Interviewees</th>
<th>Quantity of the interviewees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business units for different segments (Direct Channels)</td>
<td>Oil and Gas, Local sales manager</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Marine, Global segment developer</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Metals, Account manager</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Pulp&amp;Paper, Product manager</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Utilities Power, Operation manager &amp; Product manager</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Mining, Global sales manager &amp; Local business manager</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Food &amp; Beverage, Sales manager</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Pharmaceutical, Local sales managers</td>
<td>2</td>
</tr>
<tr>
<td>Channel partner sales (Indirect Channels)</td>
<td>Channel Partners, Global channel partners manager for Scandinavia</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Channel Partners, Local Channel partner sales manager</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 1. List of interviewees (Author)

As above table 1 shows, in total, thirteen interviews have been conducted. The different roles of the interviewees include global sales managers and the localized account managers who directly deal with customers or channel partners. Eleven interviews have been undertaken with people who work for business units which are the direct channels for selling control systems to the end customers; two interviews have been done with the sales persons who are responsible for selling control systems products to channel partners (ABB intermediaries). All the interviewees are experienced professionals who have been working for ABB for many years.
The preparation of the interview guide followed the suggestions from Bryman and Bell (2011). Firstly, prepare a list of questions in a logical order but with the possibility to be flexible to alter the order during the actual interview. Secondly, the interview questions have to be relevant to the purpose of this study and corresponded to the research questions. Therefore, the interviews start from the channel status of the control system with a interview question ‘Could you describe how you do business with control systems?’; then the question ‘What kind of challenges do you face in your channel’ lead to the challenges or issues they encounter when utilizing the multichannel strategy, eventually the suggestions for the improvements are questioned with a interview question ‘How can the current situation be improved from your experience?’; Thirdly, utilize the languages which are understandable and relevant to the interviewees. Fourthly, the interview should be conducted, and the leading questions should be not asked. Therefore, the interview questions are designed to start by asking ‘How’ ‘What’ from general aspects rather than asking specific leading questions to acquire ‘desired’ interview results. Finally, keep the record of the ‘face sheet’ information for instance name, age, gender or the position of the company, the number of years employed, and so on (Bryman & Bell, 2011, p. 475). The interview questions have been prepared by following above guidelines, and they can be found in the appendix. Moreover, some of the interviews have been conducted in face-to-face and some of them have been done through skype meeting. All the interviews have been recorded and acquired the agreements from the interviewees.

3.2.2 Literature Study
A thorough literature study has been conducted for this thesis. First, a comprehensive literature review was conducted. Then an in-depth study regarding channel conflicts and complex products within supply chain management have been carried out. In the beginning of the study, from the literature review, the concepts regarding supply chain management, distribution channels, channel conflict and complex product and supply chain have been studied. However, the theoretical framework could not be defined clearly due to that the nature of the problems of ABB control systems were not known from start. Therefore, the theoretical framework developed simultaneously with the data collection in an iterative manner. It was eventually settled to contain multichannel marketing strategy, channel conflicts & complex products and last supply chains.

3.2.3 Study of the documents
The study of documents is also a way of collecting data which has been utilized in this study. According to Bryman (2011), the vast quantity of documentary information from the organizations can help the case study to build up the background information about the company. The sources of the documents for this study are from ABB public website, ABB internal website, annual report, as well as internal documents which are provided by ABB employees. These documents help the author understand the overall insight regarding ABB business, which including the products and marketing information, channel strategies, channel partners information, and as such. It also helps to facilitate the interpretation of the interviews since the information from the individual interviewee is fragmented. The
documents from other sources help to connect the fragmented information to get a complete picture of ABB control systems channel strategy and understanding of their problems.

3.3 Validity & Reliability

According to Bryman and Bell (2011), there are two major validity and reliability have been discussed for qualitative research: internal validity and external validity.

Internal validity refers to “the extent to which changes in the dependent variable can be attributed to the independent variable, rather than to an extraneous variable” (Gray, 2004). The internal validity of this study is as follows; Firstly, the interview questions corresponded to the research questions. The data collected in this study, from interviews and other internal ABB documentation were all aimed at trying to answer the research questions. Moreover, since the study utilizes an abductive approach, the theoretical framework has successively been adjusted according to the empirical data.

External validity refers to “the degree to which findings can be generalized across social settings” (Bryman & Bell, 2011, p. 395). This criterion is difficult to match due to the small sample’s nature of a qualitative study. In this study, one interviewee from every segment of ABB control system for the Nordic market was chosen. Therefore, from each segment’s perspective, it is difficult to use one single sample to represent the whole segment. However, from the macro level of ABB control systems, it can be generalized to some extent. Moreover, the documentation from ABB also is the official information from the ABB website or internal material which can be assumed to have a good generalization.

3.4 Bias

According to Bryman and Bell (2011), one of the factors that influence business research is personal values. Moreover, values are a form of perception or personal bias which influences the research study implicitly. Gray (2004) also mentioned that interviewer bias can ‘creep’ into the interviews to influence the results and ‘interviewer effect’ needs to be avoided.

In this study, the bias can come from two sides, one from the researcher side and the other from the research participants (interviewees). As a researcher, the author tries to be as neutral as possible when interpreting data about the interviews and the ABB documentation. However, Bryman and Bell (2011) mentions that one way to deal with bias is to recognize and acknowledge that no research is bias-free. The interpretation and perception of the researcher influence not only what the study looks like but also what can be concluded from the specific study. The integration for the interview data and the documentation is biased since it is according to the author’s understanding. However, in order to make sure the interpretation of the data is correct, the ABB internal employees have been able to read and comment on the empirical parts of this study, at many different points in time. Apart from this, the author has tried to avoid guiding questions or to bring her own opinions. However, sometimes, follow-up questions were necessary to trigger the interviewee develop their reasoning further about the specific topic. From the interviewee’s perspective,
there might be bias as they answer the questions based on their own experiences and perceptions.

3.5 Ethics

The study mainly utilizes the semi-structured interviews and study of documentation as the data collection methods. The interview involves the sales manager for internal channels and channel partners. During the whole interview process, the four ethical principles have been followed: "whether there is harm to participants; whether there is a lack of informed consent; whether there is an invasion of privacy; whether deception is involved." (Bryman & Bell, 2011, p. 128). Firstly, the harm to participants refers to that the research should not harm the participants by for instance, physical harm, stress, harm for future development on careers, etc (Bryman & Bell, 2011). The interviews content is related to the problems which exist within the channels. However, from other perspectives, it can be seen to complain about other parts of the organization. Therefore, the recording and the interview transcription keep the anonymity for all the participants to avoid the potential to harm their future career. Moreover, interviewees have been informed the confidentiality of the interviews and recordings. Secondly, informed consent refers to that the participants should be told the full information about the purpose of the research and the possible implications. Also, it refers to if observation techniques or recording equipment are going to be used before the interview (Bryman & Bell, 2011). Moreover, the interviewees have the right to turn off or interrupt the recordings if they do not feel comfortable (Gray, 2004). In this study, all the interviewees were informed of the purpose of the study before the interview as well as the final expected results. The agreements of recording also have been taken from the interviewees. Thirdly, the privacy invasion refers to “the objectives of any study do not give researchers a special right to intrude on a respondent’s privacy nor to abandon normal respect for an individual’s values.” (Bryman & Bell, 2011, p. 136). The interviewees were informed that they can refuse to answer the questions if they think the information is too sensitive. Therefore, much data regarding channel financial performance could not be collected. Fourthly, deception means that researcher hides or deceives some parts of the truth to the participants. This principle is also related to the second one ‘informed consent.’ During this study, the researcher tries to minimize the extent of deception as much as possible and be open to all the interviewees about any kinds of information related to this study. Therefore, this principle has been followed.

Moreover, regarding the ABB documentation, the data confidentiality agreement has been made between ABB Sweden and the author. Therefore, all the open data are reviewed and got the agreement from ABB Sweden industrial automation division in Västerås.
4 Empirical Study

In this section, the data which is collected by interview and documentation from ABB will be presented. Firstly, it will have a brief introduction of ABB and ABB industrial automation, and ABB control system. Follow by this, the channel strategy of the control system will be described. In the last, what kinds of challenges occur in the different channels will be presented. The overall structure of this section follows the research questions 1 and 2.

4.1 ABB Brief history and status (ABB website and Internal Documentations)

ABB was founded in 1883 which firstly was a manufacturer of electrical lighting and generators. Until today, ABB owns near 147,000 employees in over 100 countries. In this 130 years' history, ABB consistently merges with other companies to expand its business. The name ‘ABB’ is a result of the merger from two big companies, ASEA and BBC (Brown Boveri) (ABB, 2018h). ABB owns mainly five areas of businesses: power grid, electrification, motion, robotics & discrete automation, industrial automation. These five businesses serve customers who come from up to 23 segments, including, for instance, Mining, oil gas, power distribution, wind power, pulp, and paper and as such.

Power Grids

Power grids business is the area which focuses on offering the power-related products, systems such as the high-voltage products, substation solutions transmission, and distribution of electricity. ABB is the world most significant maker of transformers, and it has over 60 years of history on High Voltage Direct Current (HVDC) technologies (ABB, 2019a).

Electrification

The electrification business offers a substantial product portfolio, digital solutions, and services which including EV infrastructure, solar inverters, modular substations, distribution automation, power protection, wiring accessories, switchgear and as suc (ABB, 2019a). It aims to provide the safe, smart, and sustainable electrification products, solutions, and services (ABB, 2019a).

Motion

The motion business is focusing on providing electrical motors, generators, and service worldwide. It also serves a range of powertrain solutions and transmission products. The division serves a wide range of customers from transportation, infrastructure, and discrete and process industries. (ABB, 2019a).

Robotics & Discrete Automation

The robotics & discrete business is focusing on providing robotic solutions and machine as well as factory automation products. ABB is investing significantly on R & D for
robotics and is striving to merge digitalization, artificial intelligence technologies into the innovation. (ABB, 2019a).

**Industrial Automation**

This study is focusing on industrial automation division, which offers a wide range of automation solutions to customers. The industrial automation division also owns a big range of market segments which contains customers from gas producers, power industry, chemical industry, pharmaceutical, pulp and paper, metal and mineral industry, marine industry, VA plants, and turbochargers industry (ABB, 2018d). Regarding offerings, industrial automation offers products, customer-specified systems, and service to the customers to help them increase productivity and energy efficiency. Specifically, the offerings include control system, measurement products, Turbocharging and Programmable Logic Controllers (PLC) and Process automation service (ABB, 2018d).

**ABB ability**

Despite the fact that the ABB divides the business into these five divisions, there is one digital platform – ABB Ability™, which can integrate four of them to offer the complete solutions to the customers. As below figure 4 shows how these four businesses contribute to the ABB Ability™ platform. Therefore, to provide a package of digital solutions which contains the products from different divisions is one of the essential marketing strategies for ABB. Moreover, it is difficult to divide the four business separately in some of the segments, and many salespersons work on all the products from the four divisions rather than focusing on one single division. Industrial automation division contributes their software and hardware technologies to the ABB Ability™ and the represent system is 800 x A, which is a distributed control system.

**Figure 4. Differentiation through ABB Ability™ digital solutions in the business (ABB, 2019b)**

### 4.2 ABB Control Systems (ABB website and Internal Documentations)

Control system provides the products which can keep data from the manufacturing process together with other information systems within the company and make information
available in real time (ABB.com, 2018). The represent product is the Distributed Control System (DCS), which is a star product in ABB industrial automation division. The global market for it is approaching USD 16 billion, and ABB retained its world number one share with 20% for the 19th year (ABB, 2018f). ABB is maintaining its sustainable competitive advantages by offering the cutting-edge as well as customized technologies and services for the customers to serve different customers’ needs.

Moreover, ‘the company approaches each local market with an in-depth understanding of the physical, regulatory and economic environment, enabling it to meet the specific distributed control systems needs and requirements of customers and their operations across the world’ (ABB, 2018f). The product portfolios include ABB Ability™ System 800xA, ABB Ability™ Symphony Plus, Freelance and Compact Product Suite, (ABB, 2018f). Apart from the systems, ABB control systems also offer a full range of lifecycle services for the different systems according to specific customer needs. In general, the service contains from spare parts supply, maintenance, training, and technical support to upgrade and evolution to help customers achieve better lifecycle and efficient process and first operation (ABB, 2018e). Other active players in the field are also playing important roles in the market such as Siemens, Honeywell, Emerson, Kongsberg, Yokogawa.

*Control system is complex*

A controls system is complex which is constructed by many different layers of hardware and software. In general, a control system mainly includes three parts: visualization, controller and the subunits. Visualization refer to the operating systems such as screens which is functionalized as ‘eyes’ to show the graphics, data and as such information to the operators. Controller is the ‘brain’ part of the entire control systems which processes the gathered data from all the subunits and transform them into the visualized data. Subunits are the ‘arms and legs’ of the control systems which responsible for gathering data and monitoring the different devices. For instance, subunits could include PLC, sensors on the equipment or devices in the production line. A control system generally contains some standardized hardware and software as a base, and customer-specified design according to the requests from every case. One control system could be big or small, it all depends on the customers’ requests. A control system can facilitate great collaboration between systems, equipment, and people in the production line and improve the efficiency. Below figure 5 demonstrates a schematic diagram for the control system - system 800 x A, which is a represented system of ABB control systems. The system can connect all the different functions in a factory such as operations, alarm management, production devices, and so on into an integrated system. One control system can be enormous and high-valued (millions of Swedish Krona), and the design of the control system takes long lead time to finish. These attributes determined the complex characteristic of the control systems.
4.3 ABB Control Systems Channel Strategy (Interview and ABB internal Documentations)

In this section, the practice of ABB control system strategy is presented. Moreover, in this section, the research question 2 “How does ABB control system implement the multichannel strategy?” will be answered.

4.3.1 Introduction of ABB control systems channel members

As described above, ABB control systems own a wide range of segments which including Oil and Gas, Marine, Metals, Pulp & Paper, Utilities Power, Mining, Food & Beverage, Pharmaceutical and Fish Industry. Currently, in order to reach as many as customers, ABB control systems are utilizing a multichannel strategy. The interviews have been conducted within these segments, and the implementation for the channel strategy within channels has been identified. In total, ABB control systems serve up to 18 segments and own over 100 channels partners for Nordic markets.

ABB controls systems involve mainly five parties in the channels overall. Here is a brief introduction to the different parties:

Factory side internal sales – it is a department which provides sales support such as quoting and new products introduction to the internal ABB business units and ABB channel partners sales. The division does not sell products directly to the end customer or external third parties but only communicate with the ABB internal channels (ABB business units) and channel partners sales.
**ABB business units** – It is an ABB internal sales channel which responsible for the different segment's customers directly. They are working in a segment - specified mechanism rather than product - specified due to the different requirements from each segment. The full segments of ABB control systems are Oil and Gas, Marine, Metals, Pulp & Paper, Utilities Power, Mining, Food & Beverage, Pharmaceutical and Fish Industry. For each segment, the business unit offers the ABB portfolios from Electrification, Industrial Automation and Motion, and Robotics divisions to the end customers. According to the customers’ needs, sometimes the business units offer a complete solution which contains the products from the different divisions.

**ABB channel partner sales** – it is a division which buys products from the factory side and sells to external channel partners. This sector merely focuses on the business of the product rather than projects, which means they do not have a team to execute projects.

**Channel Partners (external party)** – They are the intermediaries between ABB and end customers, which normally sell both products and projects to the end customers. These external partners can get authorizations from a program which is owned by ABB called Value Provider Program. The program offers the sales, support, service, and engineering in close cooperation with ABB to the third-party distributors including distributors, technical distributors, system integrators, panel builders and service providers (abb.com, 2018). Then the channel partners will get the authorization from ABB to be able to provide ABB products and services to the customers. This strategic alliance is one of the essential moves of ABB is taking to increase the coverage of the customers.

**End customer** – both ABB internal sales channel and external channel partners serve the end customers directly. ABB control systems offer solutions to the customers from Oil and Gas, Marine, Metals, Pulp & Paper, Utilities Power, Mining, Food & Beverage, Pharmaceutical and Fish Industry. Due to the foundation and the requirements from various segments are differ with each other, ABB business units are divided by the segments they are serving.

### 4.3.2 ABB control systems channel structure (Interview and ABB internal Documentations)

As below figure 6 demonstrates, there are mainly three big channels to the markets for ABB control systems. Each channel contains subunits to service the customers in the different segments. Before getting into the detail explanation, there are several concepts which need to be clarified.

**Project Sale** - Project sale refers to that customers need to delivery of the entire project. A complete project includes the planning, design, development and execution phases. As stated before, control system is constructed by standardized hardware and software and the customer-specific solutions. Therefore, in order to deliver a project for control system, the tight cooperation between customers and ABB’s or channel partners’ multi-functional teams (engineering, sales, operation teams, purchasing, etc.) are essential.
Product Sale – It refers to finish goods which can be directly sold to customers without engineering support to make the products customized to each customer. The complex engineering supports and customization for these products are not essential. As explained above, that control system is the combination of standardized hardware, software, and tailor-made solutions. However, in the case of product sale, ABB is not responsible for delivering the complete project but merely delivering the standardized products (hardware and software) to the customers or channel partners.

Green Field Project – It refers to the utterly new task/ business for ABB, and there is no existing ABB system in the customer plant. For instance, the customer establishes a new plant or new production line which needs new control systems. In this case, the buying decision-making process is long lead time than the brownfield projects, and it needs much more engineering and sales to be involved in the process.

Brown Field – It refers to the modified buying. In this case, there are existing customers and ABB control systems, but customers need the systems to do expansion, upgrading, or maintenance. As described in the previous section, control systems have a long-life cycle which typically lasting over twenty years. Also, because of the high value of the control systems, customers typically tend to choose to upgrade, extend, or maintain the systems when they have the new needs rather than install to a new system.

![Diagram](image)

**Figure 6. Brief channel structure chart for ABB control systems (Author)**

4.3.2.1 Channel 1 – ABB internal business units *(Interview and ABB internal Documentations)*

Channel 1 is the primary channel for the control systems. As demonstrated in figure 6, in channel 1, the ABB factory side supplies the *products* to ABB business units, which are the internal channels for control systems. Then ABB business units sell both brown and green projects in most cases to the end customers directly, and a small part of the business is selling products to the end customers.
**Business units**

ABB business units are matrix organizations which are constructed by both industries and regions. From industries dimension, there are Oil and Gas, Marine, Metals, Pulp & Paper, Utilities Power, Mining, Food & Beverage, Pharmaceutical and Fish industry, and each industry has corresponded business unit which dedicates to the business. In the regional dimension, there are Sweden, Denmark, Norway, and Finland for the Nordic market. However, the sales performance for each industry is variable. In 2018, the channel partner sales have accounted for almost half of the total sales. Within the business units, the Marine Port segment is the most substantial one while Mining, Metals, Food Beverages & Pharmaceutical have a relatively small percentage in the entire business.

**How do they do business in general (Interview Results)?**

The interviews contain the questions which concern how the ABB business units do business in general. The results show that most of the business units for all the segments do business in a similar way.

All the ABB business units sell projects to the end customer directly which means except the products development, ABB business units also take care of the system installation. On top of the standardized control systems solution for all the segments, they design and deliver the tailor-made solutions for all the customer from different segments.

Most of the businesses for control systems have a trait that the salespersons involve with the customers in a very early phase before the business investment has been determined. The area sales managers (account manager) who look after the respective markets to identify the opportunities for leading the generation. They help customers for the decision making, for instance, help them decide to use which equipment or devices (hardware) to fit in their control systems. This is also a pre-feasibility study before receiving the official request of quotation. For some of ABB’s big customers, they established a stable, trustful, long-term customer relationship. One of the representative examples from the interviews is one of the interviewees who is a key account manager in Sweden for the pharmaceutical industry, he described an example that he worked with a company who wanted to change their system since the old system was not working well. From his first contact with the customer and discuss the business with them, until they finally invested in the business, it cost 4.5 years.

Besides, for green projects, due to the new customers may not know ABB well and they have little knowledge about the exact needs of their systems. Therefore, the ABB project sales need to provide advanced solutions according to customers' needs. For the brown projects, customers are familiar with the sales process, and they know ABB more, which takes a shorter time to negotiate. For the customer who has little or limited knowledge for their systems, account managers of ABB need to help the customers to identify the possible solutions. In the extension or upgrade projects, ABB also sends the field manager to suggest possible improvements for the customer's systems before the opportunities have been identified. In the case of customers know what they want precisely, it needs less
support from ABB, and they can send the order to ABB without inquiring. Also, most of the business for most of the segments are brownfield projects due to the long lifetime of the control systems. Except for the Marine industry, which is still a growing business for ABB, therefore it mainly focuses on green-field projects.

In this early involvement, except helping the customers with the technical part, the business units also provide a budgetary quotation for the customers before the official request of quotation coming. After the pre-feasibility study phase, ABB receives the official request of the quotation from customers who need them to provide an official quotation. In general, the quotation is a combination of standardized products and engineering man-hours which refer to the working hours to design and install the customized solutions. The quotation for standardized products is acquired from the factory side sales and they provide the quotation with an added margin to the internal channels – business units. Then after this bidding & proposal phase, the project team continues to work with customers to help the feasibility study as well as the negotiation process in terms of technical and commercial aspects. The quotation process sometimes lasts several times until the final quotation is determined. All these processes continue a long time until the final projects have been delivered.

4.3.2.2 Channel 2 – ABB internal service units
The ABB service units follow a similar procedure to handle business with ABB business units. The ABB service units is an independent division which owns a strong engineering capability to deal with the big projects. Moreover, due to a long time after the sales life cycle of the ABB control systems, the service unit is a significant part of the profit of ABB business. The service units only deal with brown-field projects and spare parts sale. As explained before, the brown-field projects refer to customers need an upgrade, extension, or maintenance of their systems. Apart from these, the service unit also provides products sell which refer to the spare parts, or emergency parts, and so on to the customers (ABB Service Internal Material).

When dealing with service, they follow three main principles: rapid response, lifecycle management and performance management to meet customers variable request. Therefore, on the one hand, they have service centers such as call center and internet portal which response to the customers’ inquiring rapidly and support them in the best way. On the other hand, they have filed a sales team go to customer side to identify opportunities proactively. Thus, the sales cycle of service unit also starts from the earlier involvement with customers. They help the customers to identify the possible improvements in their systems and provide the best solutions to the customers. This part of the business in many areas is overlapping with the sales of the brown-field project in business units. After the opportunities have been identified, they follow the standardized process within ABB: feasibility study, bidding and proposal, negotiation and final delivery.

4.3.2.3 Channel 3 – Channel partner sales
The channel 3 of ABB control systems are utilizing external channel partners as intermediaries to reach the end customers.
Channel Partners

ABB utilizes variable channel partners to sell, assemble, engineer, install, or service their wide range of products (ABB, 2019c). The goals of utilizing channel partners for ABB are to strengthen the ABB brand by improving flexibility to adapt to the specific markets and maximizing marketing coverage (ABB, 2019c). ABB offers channel partners as different cooperation models, which including the non-binding agreement and partner program (ABB, 2019c). Partner program refers to that ABB has established a program is named ‘ABB Value Provider Program’ over a decade ago. This program is aiming to establish partnerships with external intermediaries. ABB provides variable training and supports to the channel partners, and in return, channel partners sell ABB products to the customers in the form of products or projects. After participating in this program, every channel partner gets a name of ‘ABB authorized value provider.’ To ensure channel partners can provide the same level of quality of ABB products as ABB internal channels, ABB provides different services, training, supports the different channel partners (ABB, 2018g).

Below figure 8 shows the different offerings from ABB according to various types of intermediaries. In general, there are distributor, technical distributors, system integrators, panel builders, power products OEMs, and service providers. For control systems, the big channel partners which capable of dealing with big projects are mainly system integrators. System integrators refer to the partners who have an ability to integrate hardware and software. All kinds of the portfolio of ABB control systems have partnerships with system integrators. Thus, the system integrators can offer the end customers the same products portfolio as ABB internal channels supply. Moreover, ABB offers channel partners variable supports, including general ABB branding, access to ABB tools, dedicated sales support, service and technical training and support which are provided by ABB expertise engineers. Apart from ABB’s training and support, some of the large system integrators have quite strong technical abilities overall on control systems, and they can handle the big projects.
Figure 7. Different offerings for ABB Authorized Value Providers (ABB internal material)

How do channel partners do business? (Interview Results)

The author has interviewed two employees from ABB channel partners sales who are responsible for the sales of products from ABB to external channel partners. They provided information regarding how they do business through channel partners for the control systems.

In general, as Figure 6 shows, there are ABB factory sales who are in charge of selling products to the channel partners. They serve the products according to the channel partners’ requests which including spare parts, the standardized extension/upgrade systems, and new systems for instance 800x A. Then the channel partners sell these products to the end customers in the form of products (spare parts) and projects (Brown projects and Green projects).

In general, if there is a new project on the markets, the end customers can put out the request of quotations, and it can go to both ABB internal channels and the channel partners. Through ABB internal channels (other business units), the salespeople start calculating the quotation from the project point of view, and they calculate the product cost as well as the other cost such as engineer hours as such. It is similar to the channel partners. However, the difference is when the channel partners get the quotation request, they ask the ABB channel partner salespersons for the product quotations which fulfill their end customers’ requirements. Therefore, ABB channel partners sales need to discuss with the channel partners to settle down the specific products which need to be quoted. Then, ABB channel partners sales provide products quotation to the system integrators, and they send the final quotation to the end customers, which adds their engineering hours cost and profits. ABB control systems deal with channel partners as a rapid, low risk, and highly profitable way. They sell products to the channel partners in a flat price, which is no matter the channel partners will use the products in any kinds of ways. After the order settled, the channel
partners are responsible for executing the projects and deliver, install the final solutions to the customers. It also deserves mention that the aftersales support of the channel partner sales is provided by ABB service unit. In this way, it lowers the risks for ABB that occurs during the projects’ execution, for instance, project delay, etc.

ABB channel partners sales sell the products, including hardware and software, to the channel partners according to their requirements. Ideally, they are trying to sell a market which ABB internal channels are not serving. However, in practical, the markets are overlapping between channel partners and ABB internal channels. On the one hand, ABB wants the channel partners to target the business which needs smaller, more distributed solutions or the localized business since the channel partners have more advantages in these businesses. Also, they are targeting the solutions that ABB internal channel is not competitive. For example, the straightforward solutions which do not need the significant competence and high price that ABB offers. However, on the other hand, it is difficult to distinguish the channel partners will deal with the products in what kinds of ways and ABB cannot control which end customers that channel partners are serving due to the legal reason. Therefore, the majority part of the businesses is overlapping between the channel partners and the ABB internal channels.

4.4 Challenges of ABB multichannel strategy (Interview and ABB internal Documentations)

In this section, the challenges which exist in the ABB’s channel strategy will be introduced. Meanwhile, the sub research question 3 “What kinds of problems does ABB encounter for their channels in terms of control systems?” will be answered.

The interview results show that there are mainly two major challenges that ABB control systems have encountered in the multichannel strategy. The first one is channel conflicts which occur between ABB internal channels and external channel partners. The second main challenge is lacking integration throughout the channels horizontally and vertically.

4.4.1 Channel Conflicts

The interview results show that the majority of the ABB business units have competitive relationships with channel partners and ABB service units, but some of them are more serious than others. As appendix table 1 shows the different competition situations in the different business unit. In general, the result shows that mining, metals, food & beverage and marine port industries have higher extent of channel conflicts than pharmaceutical, oil & gas and utility power industries in general. Moreover, even within one segment, the competitions are relatively higher in the standard automation solutions than in the higher level of digitalization businesses.

Furthermore, the causes of channel conflicts and the factors which are influencing the level of the conflicts have been identified from the interviews. As below figure 9 illustrates the overlapping markets and the similar offerings are the two major causes for the channel conflicts between ABB business units (Channel 1) and channel partners (Channel 3) and ABB service unit (Channel 2). The three factors which are affecting the extent of the
channel conflicts are including competitive advantages, markets need and customer relationships.

**Figure 8. Causes and factors of channel conflicts (Author)**

*Causes of channel conflicts*

- Overlapping Market Segments
- Similar Offerings

The interviews and internal data show that ABB business units, ABB service unit and channel partners have overlapping markets meanwhile are targeting in the same segments in a lot of cases for control systems. Firstly, the ideal goal of the channel strategy is to utilize the channel partners to cover the weak segments of ABB control systems and strengthen the marketing in those segments. However, the reality is that channel partners have many overlapping businesses with ABB business units in brown and green field projects. Moreover, due to the fact that the ABB channel partners sales cannot control the end segments of the channel partners, the overlapping markets cannot be solved easily. From a legal perspective, even ABB channel partner sales are belonging to ABB, they cannot share the information of the end customers from the channel partners to the ABB internal business units project sales. Because the channel partners and ABB business units are bidding the same projects in many cases and it violates fair competition laws if the ABB channel partners sales reveal the customers information. Moreover, ABB channel partners sales also cannot control which markets or segments the channel partners want to march due to the same reason.

Furthermore, ABB business units, channel partners and ABB service can offer similar systems and products portfolio to the end customers. ABB business units have the overlapping business in brown field projects with ABB service units. With channel partner, both of green and brown field projects are under competitions. Firstly, the reason that ABB does not divide the focusing products between ABB business units and channel partners is because it is not possible to control what the channel partners are bidding. As explained in
the previous section, ABB channel partners sales sell products to the channel partners, and they offer complete solutions to the end customers. Therefore, in most of the cases, ABB channel partners sales only know what kinds of the products channel partners need, and they do not have the information the products will be used in what kinds of the projects and who are the end customers. They are also not allowing to force the channel partners to compete in the particular business. Secondly, due to the fact control systems are having a long-life time cycle, most of the business units have more brown projects than the green projects. Therefore, it leads to the situation of the unclear cut on brown projects between ABB business units and service unit. On the one hand, the business units have the closer relationships with some of customers due to the previous business interactions. These customers tend to choose the same person who handled the projects for them before. On the other hand, the service units are also proactively searching for the business chances in in the brown projects area.

Factors affecting channel conflicts

- Competitive Advantages

During the interviews, there is a primary factor which affects the competition between ABB internal channels and channel partners is the competitive advantages. It could be explained from pricing strategy and technical competence two aspects. Firstly, in terms of pricing strategy, it has been identified that when ABB business units are quoting the same projects with channel partners, the channel partners always propose the lower price than ABB business units. The cost structure of the projects sales is basically constructed by the control systems standard hardware and software cost (for short: product cost) plus the overhead engineering cost (for short: engineering cost) for the customization process and margin of the projects. According to the interview, the channel partners purchase control systems in a higher ‘product cost’ than the ABB business units. However, the ‘engineering cost’ of channel partners is lower than ABB business units. Therefore, it results in that the total cost of ABB business units is higher than the channel partners when they are bidding the same project. Therefore, the pricing factor is deteriorating the channel conflict in some industries.

Secondly, from the technical competence perspective, not all of the customers prefer lower prices. As table 1 shows that metal, mining and food beverage industries have many competitions with both service and channel partners while the pharmaceutical, marine, pulp & paper, oil & gas industries have less competitions. Even within one industry, for instance, in the mining industry, the lower end markets have more competitions with the channel partners than the high-end markets. The root cause behind this is because of the expertise of ABB on the high level of digital solutions and it is the competitive advantage of ABB.

- Markets Needs

As explained in the ‘Competitive Advantages’ section, not all the customers are price sensitive. Based on the interviews, the industries have different customers’ prior needs, which affecting channel conflicts. Below figure 10 shows a chart of the digitalization level
of ABB’s different industries. The lower level of digitalization industries is including Mining, Metals, Food & Beverage and Marine industries while Oil & Gas, Utility and Chemical (Pharmaceutical) industries have a higher level of requirements on digitalization. And as it explained in the previous section, that the lower level of digitalization industries has a relatively greater extent of channel conflicts than the higher ones. From the customer needs perspective, it is difficult to distinguish the advantages between ABB and channel partners when it comes to lower digitalization businesses. For instance, it has been identified that in mining industry, the channel competitions with the channel partners are fiercer in the business which customers only need the standard digital solutions. The customers tend to be more price sensitive in these businesses where the channel partners have a competitive advantage due to the lower pricing level. Moreover, since the mining industry is a conservative industry and has a lower digitalization level overall. The market needs for the advanced digital solutions are less than the other industries. Thus, the overall channel competitions in mining industry is fierce. In the contrast, the oil & gas, pharmaceutical industry, and the nuclear power part of utilities power segment have less competitions with the channel partners. Customers in these industries have highly demanding on the advanced digital solutions as well as the industries expertise, and they are less price sensitive. ABB have strong expertise for these industries which can serve the customers better interest than the channel partners.

*Figure 9. The level of digitalization of ABB segments (ABB Internal Material)*

- Customer relationships
According to the interviews, customer relationships also become one of the crucial factors which affect channel conflicts. Most of the interviews answer that customer tend to choose ABB on specific projects because they trust ABB. ABB is very trustful among the customers, and they do not need to worry if ABB can support them in the long run or if ABB has the competencies. For example, one of the interviewees from the Pharmaceutical described the long-term relationships between ABB and pharmaceutical customers. Due to the specialized markets in pharmaceutical, the projects in these industries have a high request from regulations perspective. ABB is building very trusting relationships with customers over 20 years, and customers trust them as experts. However, the channel partners have a much tougher situation than ABB from this perspective. They are tough to win the trust of customers.

4.4.2 Lacking channel integration

The interviews show it lacks integration among channels vertically and horizontally. Vertically refers to the inter-channel integration between the factory side and the business units. While horizontally refers to intra-channel integrations between ABB service units, ABB business units, and channel partners. It mainly can be shown from below two aspects.

- Insufficient communications

It can be shown from the interviews for the business units and channel partners sales that they do not have enough communications throughout the channels vertically and horizontally. Vertically, the factory side in charge of selling products to the ABB business units or channel partners. However, they know limited information regarding the front sales and their pains. Some of the interviewees described sometimes it lacks the supports or slow supports from the factory sides. Horizontally, the service units and business units have some competitions on the same brownfield projects since they do not know the other side is also targeting the same customers. Some of the interviewees state that in these kinds of situation in most of the cases, it can be solved by communications after this problem occurred. In terms of channel partners and ABB internal channels, it profoundly lacks communication between them. During the interview, from both ABB channel partners, sales and ABB business units expressed the sense of alienation with each other. They see each other as competitors, especially the front, and they know little about the situation with each other. One of the reasons is because channel partners sales have a particular position within ABB and the channel partners. From the channel partners' perspective, they are serving the interest of ABB. However, from ABB business units’ perspective, they see channel partners sales as the competitors.

- Different parts serving different purposes

During the interviews, there is a strong sense that different parts of the channel members have their purposes of serving. Their common goal is supposed to be the expansion of ABB business. However, the interviews show that channel partners sales and ABB business units, service units have each their own financial goals to reach every year. Therefore, it is difficult to consider other parties when they have competitions in the business. The ABB
channel partners sales expressed the feeling that they know the competitions between ABB internal channels and channels partners, but they cannot do anything about it since they have their budget goal need to be achieved. In a similar situation, the factory side sells the products to the ABB business units, and service units with a profit add on the products because they have their target to reach. Therefore, the situations happen when ABB business units receive the quotation from the factory side for the products; they have different opinions regarding the price. Overall, each party is working hard to reach the target, but it lacks a sense of common goal or integration between each party.
5 Analysis

The purpose of this section is to analyze the empirical data by using the theoretical framework. Firstly, the analysis of ABB’s channel strategy will be presented. Secondly, the analysis of challenges of ABB’s channel strategy will be conducted. Thirdly, how complex products can influence the channel management will be analyzed.

5.1 ABB’s Channel Strategy Practices

5.1.1 Channel Structure

ABB’s channel strategy is a multichannel strategy, but mainly, it is a mix of direct and indirect channels. In the theory part, four types of channels in B2B context were defined (see figure 1 in section 2.1), (Dibb, et al., 2012).

ABB’s product, control systems, can be defined as a mix of Type E and Type F. Type E is a direct channel whereas Type F utilizes distributors (indirect channel). Moreover, due to the fact that ABB control systems serves the same market (geographically defined) simultaneously through both direct and indirect channels, the channel type for ABB control systems can also be defined as a concurrent channel (Vinhas & Aderson, 2005). The channel structure of ABB control systems has already been shown in figure 6 in the empirical data. Overall, there are three channels constructing the channel network for ABB control systems.

- Direct channel:

Channel 1:

ABB Factory Sales (Internal Channel) -> ABB Business Units -> End Customers

Channel 2:

ABB Factory Sales (Internal Channel) -> ABB Service Unit -> End Customers

- Indirect channel:

Channel 3:

ABB Factory Sales (channel partner sales) -> External Channel Partners -> End Customers

The utilization of both the direct and indirect channels simultaneously brought advantages as well as challenges to ABB. On one hand, by utilizing indirect channels (scilicet partners as intermediaries), ABB control systems are able to penetrate their businesses into the local markets. The small technical distributors have been utilized to deal with small business while bigger channel partners took care of the main customers. Regarding the local customers, they have better relations with the local distributors and their needs for the products are simpler. The local distributors can satisfy their needs with a lower price and higher speed. In this way, it helps ABB to reduce the channel cost by using the intermediaries rather than putting ABB’s own channel sales in every local small market. In contrast, for the main customers, the utilization of concurrent channel strategies increases
the winning rate of the businesses and enhances their competitiveness compared to their competitors. Moreover, the multichannel provides customers variable choices to choose the most appropriate channel which can potentially increase the customer satisfaction. Overall, utilizing a multichannel strategy can increase the coverage rate of the markets and increase flexibility of the channel networks. On the other hand, the drawbacks of this concurrent channel strategy are the arisen competition among the channels and lower channel integration. According to Rosenbloom (2006), the more channel options for reaching the customers there are, the stronger the fear of the channel members is to be bypassed or left out by other channels which leads to the competition between channels. This is exactly the situation that ABB control system is facing.

Apart from the above three main channels, each channel is constructed by sub-channels which contribute to specific segment of customers. As Ellis (2011) has described, the channel breadth of technology-intensive products is selective or exclusive due to its requirement of specialist intermediaries who can provide technical support.

Thus, the intermediaries of ABB control systems are the professional distributors. They are not only capable of dealing with supply spare parts, standard and straightforward solutions to the customers, and some of the big channel partners but also own sufficient technical abilities to handle major green and brown projects for the control systems. As described before, ABB divides its intermediaries into several categories. They are capable of dealing with the variable level of the sales and technical capabilities of the channel partners. For spare parts or some standard products which do not need too much technical competence, ABB chooses distributors and technical distributors to deal with the business. These kinds of channel partners are leaner and can cover many local small customers. The big channel partners are capable of dealing with big projects are mainly system integrators for control systems. Except for ABB, some of these system integrators are also the intermediaries for some of the major competitors for ABB like Siemens, Honeywell, and Emerson. Therefore, the competence of these system integrators is growing rapidly since they are dealing with different install bases for the control systems.

Moreover, as the theoretical framework, as shown in figure 2, demonstrates, the channel alternatives are depending on the complexity of the sales and the needs of the interaction for the sales. The higher the complexity of the sales, the more interaction is needed with the customers (Payne & Frow, 2004). The field account manager is the costliest channel alternative to deal with the customer, and they can provide face to face services and high interaction with the customers to establish customer relationships. In the case of project sales of the control systems, field account managers have been utilized in the front sales extensively. They visit customer regularly and interact and support customers according to their needs to establish trusting and reliable customer relationships. Except for the account manager, ABB is also utilizing other lower cost channel alternatives for more straightforward sales or transaction. For instance, in service units, they set up call centers and internet support, which can correspond to customer requests instantly. This mix up of channel alternatives can provide variable services according to the business needs, and it can be assumed that it also can lead to a cost reduction of the overall channel costs.
5.1.2 Sales Cycle and Customer Relationships
The organization of buying classifications has been made by Ellis (2012), which includes straight rebuy, modified rebuy, and new task. These classifications are matching with ABB internal classifications. As mentioned before, typically, there are “greenfield projects” and “brownfield projects” and “products sales” inside ABB. The greenfield project corresponds to the “new task”, and brownfield projects to “modified rebuy”. Moreover, the sales of the standardized control system products can correspond to “straight rebuy”. These products refer explicitly to the spare parts sales for the aftermarket or some standardized hardware and software which do not need extensive technical support. These buying classifications indistinctly have been utilized within ABB and they affect the practical sales cycles according to the different classifications.

According to the Friedman (2002), a typical sales cycle includes sales tasks lead generation, lead qualification, bid & proposal, negotiation/sale closure, fulfillment, and post-sale support & care as figure 3 demonstrates. This typical process is a linear process which follows step-by-step from getting in touch with the customer to identifying opportunities to the aftermarket support.

For ABB, the straight rebuy products sales for instance aftermarket spare parts, or scandalized hardware and software, are following this theoretical sales cycle as figure 3 demonstrates. The straight rebuy products don’t need extensive technical supports and the sales need to be finished rapidly and low-priced. In this way, it can facilitate the cost reduction by utilizing a routine sales procedure and cut unnecessary customer support (which is also a cost) for ABB. Customers could also enjoy the fast services. Furthermore, the short sales cycle means lower risk and faster capital return for ABB.

However, the sales of the “brown and greenfield projects” of ABB are following a slightly differed approach. It is an iterative and circular process rather than a linear process as figure 11 shows below. Compared to the typical sales cycle, the process from leading generation until fulfillment for ABB control systems “project sales” is not clear cut, but instead, it goes backs and forth several times in one sales cycle in general. This circular process becomes a necessity as the control systems are highly complex. The section 5.2 will analyze how the complexity of the product influences the channel management. Overall, due to the complexity of control systems, the extensive and tight interactions between customers and ABB are needed. Therefore, ABB control systems merged these interactions into the sales cycle to increase the intensity of the knowledge transfer as well as establishing reliable and trustful customer relationships. Moreover, this iterative process became one of the sources of developing the competitive advantages for ABB. However, the downsides of this circular, iterative approach also cannot be ignored. It leads to the long lead time for one sales cycle which decreases the channel efficiency and increases the channel cost due to the vast input of overall manhours. Furthermore, the entire channel cannot react rapidly and agilely.
Lead Generation: in this phase, the goal is triggering a potential opportunity from the customer. It can be a result of a phone call, or customer inquire from the website, and so on (Friedman, 2002). As it is mentioned in the empirical data, in the big and project sales, no matter if in green or brown field, the sales managers involve with customers in a very early phase. The contact with the customer can be a very long process before the opportunity has been even identified. Moreover, the field account managers proactively get in touch with the customers to identify potential business opportunities rather than waiting for contact from customers. The decision-making process for the control systems business is long due to the high-value attribute. Therefore, the close attachment to the customers and early involvement before the decision making can increase the trust between two parties, therefore increasing the business winning chances. However, in this way, the business is highly dependent on particular account managers. The risk of losing business in case of a staff change can be high.

Lead Qualification: typically, after the initial contact with the customer, within this phase, the customers qualify the probability for the business (Friedman, 2002). ABB control systems has an extended lead time in this phase, and sometimes the phase could repeat several times. A pre-feasibility study in this phase is regular in ABB for the big projects. The study could include the feasibility study from commercial and technical aspects Due to this phase is a prior step for the official quotation proposal, it involves many discussions with customers as well as the cooperation inside ABB. Also, ABB helps customer to identify their needs as well as the counterparts (equipment, devices, etc.) for the control systems. All the dedicated support finally contributes to the customers’ satisfaction and trusting relationships.
**Bid & Proposal:** this step converts all the previous tasks into a ready-to-close sale (Friedman, 2002). For ABB, the bid & proposal- step and the lead generation qualification steps are interconnected and iterative. In some big projects, the bidding process can repeat several times and is highly time-consuming due to high complexity of the control systems. The bidding process also needs strong cooperation between the different channel members. For instance, the business units get initial quotation regarding the products’ price from the factory side and surplus engineering hours cost, other overhead costs, and margin on it, providing the final quotation to the customers. This process could repeat several times, and it depends on the projects and the competition. Particularly in some green projects, this process is time-consuming and highly intensive since there is no existing system that could provide a price reference, and it is challenging to get the ideal price to bid. It is a strategic process which involves all the functions from the factory side to the front sales, operation team and so on.

**Negotiation/sale closure:** in this phase, the main task is the negotiation of the prices, terms, and purchasing conditions. The negotiation is followed by a finalization of payments or a signing of a binding contract (Friedman, 2002). This phase is highly dependent on the last phase, and negotiation is passing throughout the sales cycles due to the high complexity of the control systems.

**Fulfillment:** this step usually includes the delivery of the products or solutions. In some complex sales, it may include extensive configuration, customization, and installation (Friedman, 2002). It depends on the size of the project, but for the big green and brown projects of control systems, this phase involves large numbers of engineers, project managers and operation teams to work together since it is a delivery of whole projects rather than a simple product. This process can last from several months up to one year until the final delivery. The customer’s involvement in this process is also essential since most of the projects of control systems need high customization, which needs both sides of engineer teams working closely together. It is a process to gain understanding from the customers as well as building trustful customer relationships. It is also a high-risk process as a project delay can worsen the relationship. ABB has a reputation as highly trustworthy amongst the customers in terms of project delivery.

**Post-Sale Support & Care:** after the fulfillment step comes the post-sales step, which refers to support, training, and caretaking of post-sale problems for the customers. This step aims to achieve long-term customer satisfaction, loyalty, and growth (Friedman, 2002). This phase is exceptionally long for the control systems as the control systems have a long-life cycle which could last over twenty years. To build a trustful customer relationship, support is crucial. Figure 11 shows that after the post-sales support can lead to new lead generation. The service units or the business unit sales always identify the potential improvements that can be made proactively in the customers’ systems by regularly visiting and contacting customers. It is a long-term business, and regular communication with customers is essential.
Overall, the sales cycle of ABB control systems on project sale is less linear and not as clear-cut compared to theory. This process is also a process to get closer with customers to establish long-term trustful customer relationship.

5.2 Channel conflicts and Channel integrations

5.2.1 Causes of channel conflicts

As Kiran, et al. (2012) mentioned, there are mainly three causes of channel conflicts: goal incompatibility, domain dissensus, and differing perceptions of reality.

- Goal incompatibility

Goal incompatibility is one of the causes of channel conflicts, which refers to the goal of one channel member not being compatible with other members’ goals. Profit margins, competitions from the alternative channels, and access to product supply could be the reasons which lead to the incompatibility of goals between channel members (Kiran, et al., 2012). It has been identified from the interviews that the different channel members of ABB control systems tend to serve their own interests and lack a sense of a common goal. The channel structure of ABB makes the different channels independent of each other. Firstly, each ABB business unit, as well as the service unit, has its independent team to serve the interest of the particular segments. Each business unit has its budget goals in terms of revenue, and profit needs to be achieved every year. Secondly, the factory side sales for the internal channels are the supply source of the control systems products. The working mechanism, as stated before that when there are new projects which need products, the factory sales provide the quotation of the products to the business units or the service side. However, due to the factory side also having its own budget goal to accomplish, it leads to the relationships between business units, service unit and factory sales to being interdependent but serving separate goals. Thirdly, the factory sales for channel partners is the supply side of the channel 3. This channel member has a quite isolated position within ABB, and it has its budget and marketing goals. Fourthly, the external channel partners have a further distance with the other ABB channels. They are more like independent companies which are competitors of ABB’s internal channels. Therefore, due to all these channel members serving their own goals independently, it becomes one of the reasons for the competition between ABB’s direct channels and indirect channels.

If we snoop the reason behind this goal incompatibility status of ABB control systems, we see the struggle of this bulky organization. Firstly, control systems are extremely complex products which have extensive, variable functions and numerous applications. Therefore, in order to handle the different functions with the different applicable situations and markets, the products need an organization which can serve these variable purposes. Thereby, ABB divided these functions to satisfy different market needs. In order to facilitate the sales of these functions, the mechanism which has been stated above – each channel member serving their own budget goals - became one of the incentives for developing the businesses for the channels. However, the downsides have been neglected. The complex control systems most of time need tight cooperation between channels and channel members. And this goal incompatibility had a negative impact on this cooperation. Furthermore, it triggered channel competition and conflicts which lead to the inefficiency and frustration of the channels.
•  **Domain dissensus**

The differences in the domain definitions in the channels can also lead to channel conflicts. The more similar the domains are, the more significant channel conflict is. There are four critical elements of a channel domain: they are the “population to be served, the territory to be covered, the functions or tasks to be performed, and the technology employed” (Kiran, et al., 2012). After the investigation of the empirical studies, it shows that ABB control systems are struggling with the competition between channels by similar domains.

Firstly, as mentioned in the empirical part, the three channels have different offers, while the offers are overlapping. As figure 12 below demonstrates, Channel 1 and Channel 2 have similar offers on brown and greenfield projects, and it means they have competition when customers have a need to upgrade or extend the systems or explore new business opportunities. Channel 2 and Channel 3 have the overlapping area on brownfield and spare parts sales. The service unit offers the brownfield projects and spare parts, which is also the same area in which the channel partners offer. The overlapping area between Channel 1 and Channel 3 – the external channel partners is more significant than the overlapping between Channel 2. Therefore, it can be assumed that the competition between Channel 1 and Channel 3 is more intense than it is between Channel 2. If a firm is not differentiating the direct and indirect channel on the offer, it can lead to a free riding situation and increase channel conflicts (Vinhas & Aderson, 2005).

Secondly, this similar domain includes the technology similarities as well as the covered markets area. As mentioned before, the project sales of control systems need strong technical capabilities. Therefore, in the case of channel partners having enough capabilities and competing for the same project with ABB internal channel, it could lead to a furious competition due to the small technology gap between the channels.
The last leading cause of channel conflict is the differing perception of reality, which is often caused by poor communication among channel members. It often leads to disharmonious reactions towards the same situation and a lack of good cooperation among channel members (Kiran, et al., 2012). This cause is highly interconnected with the first cause - *Goal incompatibility* since the independence of the three main channels for ABB control systems leads to the poor communication between them. Firstly, the three channels are divided into two main parties: ABB internal channels and external channels. The two channels, ABB service units and business units, which are within the ABB internal channels, have better communication than the communication between them and the external channels. Therefore, it leads to poor understandings horizontally between channels, which is another factor that causes channel conflicts.

Other causes for channel conflicts can be interpreted from a power behavior view. Gaski (1984) states that power is the causative factor concerning conflict since the channel member who has more power always tend to control the behavior of subordinates or other channel members. This is a traditional view of channel conflicts which has not been identified in this study for ABB control systems. As repeatedly stated before, the internal and external channels are independent of each other, which leads to the poor communication and integration. However, the result did not show that one of the channels wants to steer the other channel.

### 5.2.2 Reduce Channel conflicts

The ways to reduce the channel conflicts can correspond to the causes of channel conflicts. Thus, it can be analyzed from the three causes of the channel conflicts: goal incompatibility,
domain dissensus, and differing perceptions of reality. The factors goal incompatibility and differing perceptions are highly interconnected, and they will be discussed jointly.

Firstly, as the leading cause of the channel conflicts for the ABB channels is *domain dissensus*, it can be reduced through the differentiation of the focusing domains of each channel. According to Vinhas and Aderson (2005), firms can choose to target one of the forms (products, services, prices as such) to differentiate the channel focusing on serving different segments. However, due to that the fact that the order power is handled by customers rather than suppliers, this resolution cannot work when the customers insist on choosing direct channels or indirect channels and suppliers are challenged to refuse orders even from wrong channels. ABB has recognized that the channel partners have an overlapping market and overlapping offers in some certain markets, but the difficulty to distinguish the segments in the channels is the dilemma. As the empirical data shows, the ABB channel partner sales have little power to influence the external channel partners to focus on some specific markets or customers. In the last year, channel partner sales have accounted for around half of the total sales of ABB control systems. As the contribution from the channel partner sales is significant, ABB must be fair and equal towards both the internal and external channels in order to attract more channel partners. Moreover, the ABB channel partners sales must protect the information of customers of channels partners for legal reasons. Therefore, even when the internal channel and external channel are in a competition for the same customer, the ABB channel partner sales cannot share any of the information to the internal channels for reasons of confidentiality. Moreover, ABB channel partners sales cannot influence too much the markets which the channel partners are targeting. The reason is that from the higher level of ABB, the channel partners are strategic channel options; however, from the perspective of the ABB channel partners sales, they are the customers. Therefore, it is essential for them to keep the trustful and reliable relationships with external channel partners. Besides, from the specialty of the control systems perspective, due to the extensive ways to utilize the products, the channel partners do not know which customers or projects the products will be used by after being sold to the channel partners. For instance, if the channel partners purchase some standardized products from ABB, it is unknown if they will use them in a project bidding or spare parts. Overall, it is difficult to distinguish the products and markets which are offered by ABB internal and external channels due to the reasons mentioned above. However, they can be distinguished at a higher strategic level.

As the empirical study has mentioned, the channel conflicts are less intense in the lower level of digitalization segments than on the higher level of segments, as also figure 10, the digitalization level in S curve shows. The lower level digitalization segments include Mining & Metals, Food & Beverage industries, while the higher level of the digitalization segments are Oil & Gas, and Utility and Chemical (Pharmaceutical) industries. Also, the financial performance shows that these higher segment industries have better sales than the lower digitalization markets. This result is matching with the study from Vinhas and Aderson (2005) that channel conflicts tend to be more intensive in the low-growth markets compared to the fast-growing markets. Regarding the high-growth markets, the channels can focus on the new opportunities while the low-growth markets tend to focus on the current opportunities since the loss of opportunities affects the low-growth markets more.
Furthermore, the channel conflicts are more intense regarding the standardized product offers since the channels can only compete on the services and prices in this case. Thus, customers easily obtain services from one channel and extract better prices from the low-service channels (Vinhias & Aderson, 2005). The Mining & Metals and Food & Beverage industries are conservative about the utilization of the higher level of digitalization since the simplified or standardized digital solutions can serve their purpose. Therefore, customers in these industries tend to choose price as the criteria. However, in the low-end markets, ABB internal channels have less competitive advantages due to the higher price level than the external channels. The interview result shows that on the project sales, ABB internal channels always hold a higher price level than the external channel partners when they are bidding the same projects. In contrast, for the higher level of digitalization markets such as pharmaceutical and nuclear power plants, ABB is holding a competitive advantage since they have better capabilities and more extensive experience to deal with a higher level of digitalization. From the customers’ perspective, these industries tend to choose a trustworthy partner to supply the products, and they are less price-sensitive than the lower end markets while the channel partners are challenging to get the trust from customers from this perspective. Therefore, it is reasonable that the channel conflicts are fiercer on the lower end markets than the higher end markets.

Overall, the distinguishing of the domains in direct and indirect channels can be made from the strategic marketing positioning. For the low-end markets, the internal channel should focus on price differentiation. For the high-end markets, the internal channel should concentrate on continuing to build competitive advantages on the technologies as well as customer relationship establishments.

Secondly, channel conflicts could be reduced by decreasing the level of the goal incompatibility and differing perceptions by effective communication and coordination internally and externally. Communication and coordination can give a significant impact to channel conflicts, and it is vital to communicate with external channel partners as well as the internal channel members (Kiran, et al., 2012). The theory also states that the roots of the channel conflict are the inherent interdependence of the channel members due to the specialized function that each channel member holds. This theory is aligning with the discoveries from the empirical data. As stated before, the three main channels of ABB control systems are highly independent, especially between the internal and external channels. Moreover, even within one channel communications are lacking. However, the channel tasks are accomplished by the cooperation of all the channel members. Therefore, the lacking communication of channel members could decrease the channel performance and effectiveness. One way to facilitate communication and coordination is by establishing channel management groups to oversee all the channels and develop channel strategies to lead the direction (Kiran, et al., 2012). ABB already has a channel management team. Therefore, the team should establish some work routines (monthly meetings, etc.) to facilitate the communication between external and internal channels. It also needs to act as a communication hub, transmitting a unified channel strategy from the top management level to the front sales. Moreover, the empirical data states that ABB channel members lack
a sense of the common goal. According to Reve and Stern (1979) firms should establish a collective goal which can serve the best interest of the customers as well as the self-interest of the firms. Therefore, a strategic channel management plan which includes the clear collective goal can help to reduce the channel conflicts. Moreover, it also can facilitate the understanding of each channel member and increase their integration. Notably, the ABB channel partners sales are holding an extremely sensitive position inside and outside of ABB as the internal channel sales see them as competitors while the external channel partners see them as representatives of ABB. They have the difficulty to get the trust and understanding from both sides. Therefore, it is necessary to facilitate the understanding between each party and increase the integration.

5.3 Complex products and Channel Management

As Ellis (2011) has described, the channel breadth of technology-intensive products is selective or exclusive due to its requirement of specialist intermediaries who can provide technical support. This is alignment with the theories from Wuyts, et al., (2004) which state that complex products need extensive information flow among the suppliers, intermediaries, and customers because the complex products always need extensively customized solutions and technical support. In result, the intermediaries of the complex products require higher technical knowledge about the products.

On the other hand Lamming, et al. (2000) state that product complexity is one of the critical factors which can increase the complexity of the supply chain. This negatively influences the integration of the supply chain since the complex products need much stronger ties between channel members to be able to transfer the complex knowledge through the channels. Moreover, Hobday (2000) has mentioned that the definition of complex products is "high-technology, business-to-business capital goods used to produce goods and services for consumers and producers." Furthermore, they are always high-cost and made up of many interconnected, always customized parts. The attributes of ABB control systems are aligning with the definition which can be also concluded from all the previous descriptions. Moreover, as mentioned in the empirical data, ABB faces the challenges of lacking integration between channel members, and they are mainly reflected by two significant points: poor communications and lacking sense of common goal. The control systems are constructed by a big amount of hardware and software, and the sales of control systems are equivalent the selling of the projects. The process of customization, installation, and application needs a great degree of cooperation between the customers’ side and ABB’s side. In addition, the functions that are involved from each side are multiple, for instance, sales, project management, R&D as well as the operations. The process of the delivery of the project needs thousands of transforms of information between customers and ABB and ABB internal channels. Therefore, one of the factors that lead to a lack of integration of channel members is the complexity of the control systems. In other words, it is crucial for the control system to be more integrated in order to deliver a complex project to the customers. Any poor communication and coordination between the channel members could lead to the delay of the projects or inadequate design.
Moreover, complex knowledge transmission leads to complex products that need strong customer relationships. As explained in section 5.1.2, ABB is establishing a trustful and reliable customer relationship along with the sales cycle when it comes to the sales of the project for internal channels. Nowadays, customer relationship is one of the critical competitive advantages for the firms, particularly for complex products such as control systems. The integration of all the channel activities to provide an individual, collective, and consistent value proposition to the customers could contribute to a trustful and reliable customer relationship (Payne & Frow, 2004). From the empirical data, it can be deduced that customer relationships are one of the factors that can influence the channel conflicts. Most of the customers tend to select ABB’s internal channel rather than external channel partners when they know that highly digitalized control systems are complex systems which need a trustful and more experienced supplier to deliver it successfully without jeopardizing it. Particularly in some areas in which ABB is having expertise such as pharmaceutical, Oil & Gas and power plant industry, the customer prefers to choose ABB as their supplier. Thus, ABB has an excellent market performance in these segments.
6 Conclusion

In this chapter, the remaining research question will be answered. There are three research questions in total. The sub-questions Rq2 “How does ABB control system implement the multichannel strategy?” and Rq3 “What kinds of problems does ABB encounter for their channels in terms of control systems?” have already been answered during the empirical chapter. Therefore, in this chapter, the remaining main question RQ1 “How can ABB use multichannel strategy more effectively in a complex product context?” will be answered.

6.1 Answer for the Research Question 1

RQ1: How can ABB control systems use multichannel strategy more effectively in a complex product context?

Through the case study of ABB, and answered the two sub-questions, how to improve the situation in ABB can be answered now. The empirical section has identified that the main challenges of ABB control systems in their channels are channel conflicts and channel integration. These two issues are highly interconnected with each other and are also related with the complexity of the control systems. In the analysis section, the in-depth discussion regarding how to reduce channel conflicts for ABB control systems has been conducted. Thus, in this section, the results regarding the RQ3 are extracted from the analysis and empirical part. The channel conflicts of ABB control systems could be reduced by the three points below.

- Distinguishing the channel strategy by strengthening the competitive advantages of each channel.

ABB should make a channel strategy based on the characteristic of individual channels and strengthen the competitive advantages of each channel. ABB internal channels own many competitive advantages which could differentiate ABB from the regular channel partners. Figure 13 summarizes the main strengths and weaknesses of both internal channels and external channels. In terms of strengths, ABB internal channels have technical competences on all offerings no matter whether advanced digitalized solutions or standard solutions. Moreover, ABB has a strong brand loyalty which equals good quality and trustful and reliable for customers. Behind the brand loyalty, ABB also maintains tight customer relationships with some main customers. Especially, in the industries which need special competences such as the pharmaceutical, nuclear power plant, oil & gas and marine industries. ABB receives a lot of trust from those customers. However, the drawback of the ABB internal channels is the high cost which has been explained previously. Rigidity is another drawback for ABB internal channels and they cannot act flexibly as the channel partners. In contrast, flexibility and cost friendliness are the competitive advantages of the channel partners. Most of them can deal with the small customers rapidly, however, some big players also own strong technical competences in some higher digitalization solutions which can serve high-end markets. On the other hand, channel partners are also less trustworthy and reliable from customers’ eyes. The big players have enough technical
competences to deal with major projects but compared to ABB, they still are less experienced especially in some specialized industries such as pharmaceuticals.

Firstly, ABB control systems have a strong technical competence on all kinds of offers - no matter regarding the advanced digitalized solutions or standard solutions. As one of the results of the RQ2, which is concerned with the challenges which exist in the channels of the ABB control systems, the level of the channel conflicts of each segment is related to the digitalization levels of the industries, at least to some extent. Moreover, within one segment, the different markets have variable levels of channel conflicts which also in some extent relate to whether the markets need a higher level or lower level of digitalized solutions. Therefore, for the oil & gas, utilities, powers and pharmaceutical industries, the overall channel strategy should focus on the technical competence and on a higher level of digital solutions since the customers within these industries will value this differentiation. But for the market of the industries which have a lower standard of request regarding digital solutions, the channel strategy should focus on the low cost and efficiency aspects. For mining, metal and food & beverage industries, the markets tend to be more standardized, requiring digital solutions of lower complexity. For these customers, ABB has a relatively weak position due to the high cost of the ABB solutions. Therefore, in order to compete in the low-end markets, ABB could choose either ABB internal channel or channel partners to focus more on these markets to relieve the channel competition. For instance, spare parts selling and standard solutions could be performed by channel partners. Focusing on these smaller markets they could provide services in more flexible ways and at lower costs.

However, giving up these low-end markets would also be a big loss for ABB. Therefore, in order to compete with the channel partners, ABB internal channels could use lean operations or an optimized channel mix to reduce the channel cost. As discussed before in

Figure 12. Strengths and Weakness of ABB internal channels and channel partners (Author)
the analysis chapter and as figure 2 ‘Channel alternatives based on cost and the complexity of sale’ shows, ABB could choose a mixture of lower cost channel alternatives such as internet, tele-marketing or desk-based account managers combined with high cost-field account managers to serve the low-end markets.

- Facilitate communication and coordination among channel members, establish collective goals to increase channel integration.

According to the theory, the root of the channel conflicts is the inherent interdependence of the channel members due to the specialized functions that each channel member holds. Therefore, a reduction of independencies and a facilitation of cooperation between ABB factory sales, ABB business units, service units, ABB channel partner sales and external channel partners could be one way to reduce the channel conflicts. Moreover, as the empirical chapter mentioned, these big five channel members of ABB control systems are independent in the organization and each of them owns their budget goals. This work mechanism facilitates the independence of each party and makes the channels more fragmented. Therefore, it is essential to set up some communication mechanisms to facilitate the communication among channel members for instance by periodic meetings. If possible, a channel management team should be established to build a common spirit in both channels which could guide the channels to work in a same direction. Moreover, the unification of the common understanding of top managers and front sales are also crucial for the channel integrations. Since the front sales are the direct contact points to the customers their understanding of the channel strategy could influence customers’ perceptions.

- Continue the maintenance of the customer relationships but in an optimized way

The control systems overall are complex products which need complex knowledge transmission between customers and suppliers. Therefore, complex products need strong customer relationships and close cooperation between customers and suppliers. ABB is maintaining good customer relationships in the different channels. Especially in the pulp & paper, oil & gas, pharmaceutical industries, the interviewees expressed that customers were willing to choose ABB rather than other competitors due to the trustworthy relationships with customers. Therefore, continuing to utilize customer relationships as a strong competitive advantage to strengthen the brand loyalty of customers could influence the channel conflicts. In addition, for the high-end market, ABB could continue to strengthen the customer relationships throughout the whole sales cycle. Moreover, it is impossible to imitate this competitive advantage which could be an entry barrier for other competitors. However, it is impossible to maintain the close relationships with every customer since it is costly. Therefore, choosing the potentially profitable customer relationships could be another way to reduce cost.
6.2 General implications

This study used ABB as a case to investigate the utilization of the multichannel strategy in a complex product context. The results of the research questions are more ABB orientated and practical suggestions for improving the situation in ABB. However, the three aspects which have been mentioned in above section 6.1 can be also seen in a greater context. To be specific, the implications for the question “how the multichannel strategy can be used more effectively in the complex products context” can be generated.

Firstly, the existing problems in ABB’s channels are mainly channel conflicts and lacking integration. These two challenges can imply to other similar companies that utilize a multichannel strategy in a complex product context. On one hand, the characteristics of the complex product are common for all the industries according to the definition of the concept and which is ‘high value, high level of customization, highly interconnected components, complexed designed system, etc.’. Therefore, in order to meet customers’ requests, the involvement of the end customers is regular in the case of the complex product. Because of these characteristics, the channel management for complex products is more difficult and complicated. On the other hand, the multichannel strategy itself tends to generate issues such as channel conflicts and channel integration. Therefore, utilizing a multichannel strategy in a complex product context brings extra challenges for channel management. Furthermore, Due to the fact that complex products need extensive information flow among the suppliers, intermediary and customers, the negative impact on the supply chain integration will be generated (Wuyts, et al., 2004). The properties of complex products require tight connections among channel members, as well as smooth cooperation and communication. All this cannot be achieved without good channel integration.

Secondly, from the solutions point of view, three suggestions have been made for improving channel management for ABB. These can also be utilized in a more general context. The first suggestion was “Distinguishing the channel strategy by strengthening the competitive advantages of each channel.” Channel conflicts are an evitable risk and problem for a multichannel strategy. In a complex product context, the classification of the products influences the channel strategy as well. However, unclear classifications for the products through multi-channels can cause overlapping markets. As a result, channel conflicts occur. For instance, ABB’s control systems have three classifications (‘straight rebuy, modify purchasing and new order’), however, the distribution of them is not clearly divided through different channels. Therefore, channel conflicts have occurred. The second suggestion was to “facilitate communication and coordination among channel members, establish collective goals to increase channel integration.” As mentioned above, lacking channel integration could be another evitable issue in the multichannel strategy as well as in a complex product context. Therefore, facilitating the communication between channel members can strengthen the knowledge transfer as well as information flow throughout the channels. Thirdly, maintaining close customer relationships can also improve the situation. It is important to maintain good customer relationships in many industries. For complex products this is especially true. As can be learned from ABB’s case, the sales cycle of ABB
for the complex products is nonlinear and circular. Maintain good and close relationships with customers can help companies build trustworthy relationships. Furthermore, new business opportunities could be generated from this. Because of the high value (high risk) of the complex product, the companies which can provide closer support and more professional advice to the customers, can reduce the risk to the customers and gain a competitive advantage.

In summary, this case study on ABB’s control system can be implied to a greater context for the companies which utilize a multichannel strategy in a complex product context.
7 Discussion

In this chapter, the discussion regarding the managerial implications which could be deducted for ABB will be discussed firstly. Following that, the academic contributions and ethical implications of this work will be presented. Finally, the future studies will be suggested.

7.1 Managerial implications

This thesis work has helped ABB control systems to identify the existing problems in their channels which they didn’t realize until now. ABB has a huge organization, which leads to isolation between different functions in the channels. This study provided an opportunity to enhance the knowledge amongst these functions and more about the overall status. Furthermore, except identifying the problems, this study also suggested solid practical improvements for the channel strategy of ABB control systems. ABB control systems should improve their channel efficiency through distinguishing the channel strategy by strengthening the competitive advantages of each channel to reduce the channel conflicts. ABB also should facilitate communications and coordination among channel members to increase the channel integration meanwhile reduce channel conflicts. Furthermore, all the channels should establish collective goals to increase channel integration and increase the motivation. Finally, they should also keep maintaining the reliable relationships with the customers since this is their nonreplicable competitive advantage. Hopefully through this study, they can have a clearer picture regarding their problems and their future directions for their channel management. Also, this study helped to shape their thoughts for keeping sustainable competitive advantages with their optimized channel strategy.

7.2 Academic contributions

As mentioned in the study purpose section and conceptualization section, the previous study regarding multichannel utilization in the complex product context is not sufficient. The concurrent study mainly focused on the multichannel study in a B2B or B2C circumstance, seldom there are studies which relate to multichannel strategy with complex products. Therefore, from this perspective, this study provided some academic insights regarding the relationships between complex products and the channel management through a practical case in ABB control systems. The complex products need massive information and knowledge exchange which brings extra difficulties for channel integration in the circumstance of multichannel strategy. Meanwhile, for complex products business, tight cooperation between channel members is essential. However, the multichannel strategy itself have the flaw of channel integration and conflicts which led to the additional challenges when dealing with complex products. Thus, Furthermore, this study also can be a practical implication for other similar companies.

7.3 Ethical implications

The purpose of the thesis was to identify the challenges which exist in ABB’s channel strategies for the control systems, thereby improving the status quo and achieve a more
efficient channel strategy. However, during the study, it became clear that the main challenge of the channels is the channel conflict among the internal business unit (direct channels) and the external channel partner sales (indirect channels). From an ethical point of view, there is a risk that ABB will use this study to cut some of the external channel partners and they would lose their businesses in this case. Furthermore, most of these channel partners are small businesses and they have a high dependency on ABB. Therefore, if they lose the businesses of ABB, it may lead to their bankruptcy in the worst case. Secondly, this study has suggested some improvements organizational wise. Therefore, if ABB conducts an organization change due to this work, some of the employees may need to change their current positions or even lose their jobs. These kinds of situations are definitely not what the author wanted. Therefore, a reasonable approach to improve the channel strategy needs to be consciously reviewed if ABB wants to change.

7.4 Future Studies

Due to time limitations, this work only conducted a case study on ABB. Since the purpose of this study was to give some practical implications for other companies similar to ABB which utilize the multichannel strategy in a complex product context, it would be interesting if some future studies could be done in other similar companies. A comparison with this study to identify the differentiations and similarities could bring more practical guidance to other companies as well as expanding the knowledge pool from an academic perspective.

Moreover, this study only concentrated on the qualitative aspects of the ABB channel strategy. In future studies, the quantitative aspects such as evaluating the channel performance through analyzing different drivers or factors to address the multichannel challenges in a practical organization could also be an interesting aspect to explore.

7.5 Future suggestions for ABB

Through this study, the author recommends several suggestions which can potentially help ABB control systems to become aware of the potential risks in their channels. These suggestions are not only based on the study points of this work, but concluded from the additional information which helped to shape the research direction during the thesis work.
- ABB should be aware of the threat of the major channel partners. Not only from the technical point of view, but also from network point of view. They have the tendency to spread their network by slipping into the gaps of some big customers. They are building strong networks which could become an irreplaceable competence for them.
- The digitalization is the future; therefore, it is extremely important to prompt higher level of digitalization systems such as 800 x A. However, ABB also should aware of the gaps between future and current customer needs. Also, as we emphasized before, the different industries have differed needs on the digitization levels. Therefore, ABB could continue maintaining the sustainable competitive advantages by becoming more customer oriented.
- ABB should keep monitoring the channels cannibalization rate and channel performance and establish the report systems to be able to keep track.
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Appendix

1. Interview questions:

- **Background explanation**

The goal of my thesis is to identify the existing problems of the channels and suggest the possible improvements for channels of Control Systems. The objective of the interview is to get to know your situation and pains.

- **record agreement**

- **Basic information acquiring:** working years, years stay in ABB, gender, position

**Interview questions:**

1) Could you first introduce your job responsibilities briefly?

2) Could you describe how you do business with control systems?
   - How do you sell control systems to the end customers?
   - How do you deal with new systems (new tasks), upgrade systems (modified rebuy) and spare parts (straight rebuy)?
   - What are the different steps in your sales cycle?
   - How do you proceed in different steps in your sales cycle?
   - How do you execute project for control systems?
   - How many people or which percentage of employees work strongly connected to control systems?
   - Is the capacity high enough or do you need additional support when you have new projects?

3) What kind of challenges do you face in your channel?
   - What kind of challenges do you face when you sell control systems projects?
   - Do you have any challenges with CT as a supplying unit? If yes, what kinds of challenges?
   - Do you have any challenges with other internal sales units? If yes, what kinds of challenges?
   - Do you have any challenges with external value providers when you sell control systems? If yes, what kinds of challenges?
   - How do these challenges influence the sales performance (profitability and efficiency) and customer satisfaction?
   - How do you deal with these challenges?
- What are the differences and similarities of selling control systems compared to other products?

4) How can the current situation be improved from your experience?