



CHALMERS
UNIVERSITY OF TECHNOLOGY

Stakeholder communication as a strategic tool for firms offering complex products in dynamic environments

Master's Thesis in Management and Economics of Innovation

AXEL ENGVALL

EMMA WIBEL

Department of Technology Management and Economics
Division of Innovation and R&D Management
CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2018
Report No. E 2018:063

MASTER'S THESIS E 2018:063

**Stakeholder communication as a strategic tool for firms
offering complex products in dynamic environments**

AXEL ENGVALL

EMMA WIBEL

Tutor, Chalmers: Ingrid Mignon
Tutor, RUAG Space: Susanne Folkesson

Department of Technology Management and Economics
Division of Innovation and R&D Management
CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2018

Stakeholder communication as a strategic tool for firms offering complex products in dynamic environments
AXEL ENGVALL, EMMA WIBEL

© AXEL ENGVALL, EMMA WIBEL, 2018.

Master's Thesis E 2018: 063

Department of Technology Management and Economics
Division of Innovation and R&D Management
Chalmers University of Technology
SE-412 96 Gothenburg, Sweden
Telephone: + 46 (0)31-772 1000

Acknowledgements

This master thesis was developed in collaboration with RUAG Space during the spring of 2018, as the final part of the master's program Management and Economics of Innovation at the department Technology Management and Economics, Chalmers University of Technology, Gothenburg, Sweden.

We would like to thank the people at RUAG Space for dedicating their time and resources to the completion of this thesis. Our appreciation goes especially to communications manager Susanne Folkesson at RUAG Space, who have provided us with support, advice and energy throughout the thesis process, and to Camilla Malmer who gave us guidance and enthusiasm in the initial phase of the thesis work. Furthermore, we would like to thank the other participating companies and the people who were interviewed.

We would also like to thank our supervisor at Chalmers, Ingrid Mignon, who patiently and continuously have provided valuable feedback and inspired us to move forward even at times when we felt completely lost.

Chalmers University of Technology
Gothenburg, Sweden
2018-06-19

Axel Engvall



Emma Wibel



Abstract

To compete successfully and satisfy the needs of customers, firms strive to position themselves strategically. The way to achieve a strategic position depends on several factors, such as industry characteristics, product characteristics and stakeholders to the firm. When an industry changes, the firms in that industry are faced with challenges in retaining or attaining a strong strategic position. If the products offered by a firm are complex, this further affects the options for strategic positioning. In this study it is argued that for firms offering complex products in dynamic environments, stakeholder management is an option for strategic positioning. More specifically, this study examines the use of stakeholder communication as a strategic tool for firms offering complex products in dynamic environments.

To fulfill the purpose, a case study was conducted with one main case at RUAG Space and three smaller, contrasting cases at AstraZeneca, GKN Aerospace and Saab Group. The research resulted in findings from 14 interviews. These findings were combined with previous research and subsequently analyzed.

In conclusion, the study shows that a dynamic industry forces established firms to adapt to the changing demands and simultaneously satisfy the demands that have remained the same. Furthermore, product complexity decreases the firm's ability to radically change the products as a way to strategically position themselves, while encouraging incremental product improvements. The study further shows that the stakeholder groups government, the public and potential employees are elevated in importance for established firms offering complex products in a dynamic environment.

The study emphasizes that communication by firms offering complex products significantly differs from communication by other firms. In general, the firms offering complex products are regulated in their communication. Moreover, the communication should be tailored according to the properties of the stakeholder groups and their technical comprehension, where techniques such as visualizations and simplifications can be used for the latter. Another factor impacting the success of the communication is the manner in which it is conducted. Digitalization enables a larger number of channels than before, as well as qualitative and quantitative analysis of feedback on communication activities.

Communication is playing an increasingly large role in companies and represents a useful strategic tool for firms offering complex products to position themselves in dynamic industries. By increasing the knowledge regarding communication throughout the whole organization, firms offering complex products will be better equipped to face the challenges of a changing industry.

Keywords: Strategic positioning; dynamic industry; complex product systems; stakeholder management; strategic communication; case study

Table of content

1	Introduction	1
1.1	Background	1
1.2	Purpose & Research Questions	2
1.3	Scope and delimitations	2
2	Theoretical Framework	4
2.1	Strategic positioning.....	4
2.1.1	Strategic positioning and industry structure.....	4
2.1.2	The impact of complex products.....	5
2.1.3	Strategic positioning through stakeholder management	6
2.2	Stakeholder communication.....	9
2.2.1	Communication as a strategy	10
2.2.2	Factors impacting strategic communication.....	10
2.2.3	The process of strategic communication.....	11
2.3	Summary of the Theoretical Framework	14
3	Methodology	15
3.1	The research journey	15
3.2	Research design.....	16
3.2.1	Research purpose.....	16
3.2.2	Research strategy.....	16
3.2.3	Design of the case study.....	17
3.3	Data Collection.....	18
3.3.1	Literature Review	18
3.3.2	Interview design	18
3.3.3	Sampling of interviewees	18
3.4	Data Analysis	20
4	Empirical context	22
4.1	The space industry and RUAG Space	22
4.2	The pharmaceutical industry and AstraZeneca	23
4.3	The aerospace industry and GKN Aerospace	24
4.4	The defense industry and Saab Surveillance.....	24
5	Empirical findings	25
5.1	Strategic positioning.....	25
5.1.1	Dynamic industry	25
5.1.2	The complexity of products.....	27
5.1.3	Stakeholders	29
5.2	Stakeholder communication.....	34

5.2.1	Communication organization and structure	34
5.2.2	Strategic communication in a dynamic industry with product complexity.....	37
5.2.3	Communicating with stakeholder groups.....	39
5.2.4	Factors influencing strategic communication	43
6	Analysis.....	47
6. 1	Dynamic industry, product complexity and stakeholder classification.....	47
6.1.1	Strategic positioning in a dynamic industry	47
6.1.2	How product complexity affects strategic positioning.....	47
6.1.3	Stakeholder characteristics and classification for strategic positioning.....	48
6.2	Stakeholder communication for CoPS firms in dynamic industries	50
6.2.1	Strategic communication.....	50
6.2.2	Factors impacting strategic communication.....	51
6.2.3	The process of communicating	52
7	Conclusions	56
8	Implications and further research.....	59
9	References	61

1 Introduction

This chapter introduces the problem background and the company chosen for the case study. The purpose and research questions are defined, and the chapter ends with scope and delimitations.

1.1 Background

Firms strive to achieve a strategic position in their industries. A strategic position is where a firm can successfully distinguish itself from competitors in areas that allow the firm to satisfy customers (e.g. Skaggs & Youndt, 2004; Porter, 1996). If changes in the industry occur, strategic positioning for firms might be affected. An industry can change in several ways, for instance through the introduction of new technology, new actors entering the market, changing demands or deregulations. When such changes occur the industry becomes dynamic, and the firms in that industry are faced with challenges in retaining or attaining a strong strategic position.

The manner in which the firm can achieve a strategic position is according to Porter (2008) dependent on the characteristics of the industry. As technological development has proceeded, high technology industries have emerged. In these industries, cutting edge technology is developed and incorporated in products. From a contemporary perspective, high technology industries are characterized by high degree of complexity in products, systems and services. The products in such industries are coined Complex Product Systems (CoPS). CoPS can be defined as high value products and high technology constructs where design, management, and systems engineering and integration are emphasized in production (Hobday & Rush, 1999). CoPS are different from manufactured commodity goods, for example in the extent of interactions with the firm's external stakeholders. Hobday & Rush (1999) argue that one major distinction of firms manufacturing CoPS is that they need to consider a large network of actors, such as small firms, major users, partner companies, regulators and government departments, often in collaborative efforts. Identifying, classifying and managing stakeholders thus becomes a bigger challenge for manufacturers of CoPS compared to commodity goods manufacturers. For a firm offering complex products, or a firm that operates in a dynamic industry, three stakeholder groups become elevated in importance; the government, the public and potential employees.

In the management of stakeholders, communication can act as a useful tool (Cornelissen, 2017). While the innovation processes at firms offering CoPS have been extensively researched (e.g. Hobday, 1998; Hansen & Rush, 1998; Davies & Brady, 2000; Ethiraj & Levinthal, 2004), the role of communication in this area remains somewhat unexplored, thus laying the foundation for this study. This thesis examines the use of communication as a strategic tool for firms offering complex products to achieve a strong position within a dynamic industry.

Examples of complex products are aircraft engines, chemicals, nuclear technology, robotics equipment, satellite systems, space launch vehicles and telecommunications (Hobday & Rush, 1999). The environment in which many firms offering CoPS exist is often characterized by change, deregulation, globalization and privatization (Hobday & Rush, 1999). A prime example of such an industry is the space industry which is increasingly transforming towards a higher involvement by the private sector, a phenomenon often referred to as "New Space" (Paikowsky, 2017).

To support the focus of the thesis, a main case study of a company in the space industry, RUAG Space, was conducted. RUAG Space has a leading position as a supplier of space products in Europe, and is increasingly striving to strengthen its position in the U.S. The company offers products in three areas: Electronics, Spacecraft and Launchers. In Sweden the company has two production sites, in Gothenburg and Linköping, with headquarters in Gothenburg.

In addition to the main case study, three less comprehensive case studies were conducted within the aerospace, pharmaceutical and defense industry respectively to contrast the use of communication as a strategic tool. Furthermore, the contrasting case companies also offer products that can be characterized as complex.

1.2 Purpose & Research Questions

The purpose of this thesis is to examine the use of communication as a strategic tool for firms offering complex products to achieve a strong position within a dynamic industry. Through this study, the authors aim to contribute with findings in how a dynamic industry and product complexity affects the firm's ability to achieve a strategic position. Furthermore, the study aims to contribute with findings in how the stakeholder groups government, the public and potential employees affect the firm's ability to achieve a strategic position. Thus, the following research questions have been formulated:

RQ1: How does a dynamic industry affect strategic positioning?

RQ2: How does product complexity affect strategic positioning?

RQ3: How do the stakeholder groups government, the public and potential employees affect strategic positioning?

RQ4: How can communication be used as a strategic tool to manage product complexity, stakeholders and changes in the industry?

1.3 Scope and delimitations

In examining how a company can position itself strategically in an industry, there are several ways in which the company could take action. This study does not closely evaluate different ways in which companies can attain a strategic position, but rather focuses on how communication can be used as a strategic tool for that purpose. The study further distinguishes between internal communication and external communication, and the focus lies solely on the latter.

The thesis is written in collaboration with RUAG Space AB in Gothenburg. Thus, the study will mainly focus on the national aspects of RUAG Space AB's operations in Sweden. This narrows the scope of stakeholders and communication activities considered, as a majority of the data collected concerns the Swedish operations of RUAG Space AB.

To avoid examining the concepts suggested in this thesis in isolation, the scope of the study stretches to include three other firms which also manufacture complex products. These firms are active in different industries than the one of the main case firm, which means that a straight comparison of industry aspects is not possible. Rather, these firms are examined to contrast the use of communication as a strategic tool by firms with complex products.

In examining the use of communication as a strategic tool, the result of this thesis will not be a communication strategy. The process of developing a full communication strategy for RUAG Space AB would be a challenge within the available time horizon. Therefore, the resulting implications of the study for RUAG Space AB will work as recommendations and suggestions rather than a concrete action plan. The communication recommendations will also not include actual physical or digital marketing products but instead act as strategic guidance for future communication projects.

2 Theoretical Framework

In the following chapter, the theoretical framework of the study will be presented. Initially, the concept of strategic positioning will be described. Furthermore, existing theory about dynamic industries, CoPS and stakeholder theory will be presented as well as how these factors impact strategic positioning. Stakeholder communication will then be presented as a strategy for coping with industry changes, product complexity and stakeholders. Finally, theory about strategic communication will be presented together with the strategic communication process.

2.1 Strategic positioning

A strategic position is where a firm can successfully distinguish itself from competitors in areas that allow the firm to satisfy customers (e.g. Skaggs & Youndt, 2004; Porter, 1996). The strategic position of an organization involves the way it pursues its goals given the threats and opportunities in the environment and its resources and capabilities (Rue & Holland, 1989). This demonstrates that a strategic position is formed both by the internal characteristics of an organization, as well as its external environment. Thus, a strategic position is not necessarily static but can change over time. This is further emphasized by Porter (2008), who states that firms need to continuously learn about their competitors and environment (industry) in order to improve or change their position.

2.1.1 Strategic positioning and industry structure

Porter (2008) argues that the industry sets the scene for strategic positioning. He developed the five forces framework, where the five forces are threat of new entrants, threat of substitutes, power of buyers, power of suppliers, and industry rivalry. Through the framework he argues that the five forces determine industry profitability and allows anticipation of and influence on the competition. Furthermore, understanding the five forces is the starting point for finding a strategic position. Porter (2008) further outlines three approaches for positioning the firm strategically. The first approach is to position the firm within a given industry structure, the second approach is to exploit industry change, and the third approach is to shape the industry structure. The following three paragraphs will briefly discuss the respective approaches.

The first approach, positioning the company within a given industry structure, is about identifying a position where the five forces of the industry are weak and build defenses against competition. Using this approach, the five forces framework can reveal how and where the company has a unique ability to cope with the industry's competitive forces (Porter, 2008).

The second approach is about exploiting industry change by claiming a new or superior position. As an industry fluctuates structurally, new strategic positions to serve new needs in new ways may appear. Claiming a new position might be hard for established actors who may be bound by previous strategic initiatives. If established actors fail to exploit structural changes in the industry, new entrants or smaller firms may fill the void created by the change (Porter, 2008).

The third approach is about shaping the structure of the industry to gain a superior strategic position. In reshaping the structure of an industry, the company will gain benefits if the direction of competition can be shifted to a state where the company excels. Such a shift may be beneficial for several participants in the industry, and not just the company that acts as the catalyst in reshaping the industry (Porter, 2008).

From the three approaches for strategic positioning outlined by Porter, some conclusions can be drawn. The industry and the firm's current position within it affects the options for strategic positioning. Furthermore, the first two strategic approaches can be viewed as reactive measures where the company reacts to the conditions, or the change of the conditions, in the industry. Conversely, the third strategic approach is proactive, where change is initiated by the company.

2.1.2 The impact of complex products

If industry is at the heart of strategic positioning, products are at the heart of the industry. Complex products have been researched extensively, and the resulting field of research is coined complex product systems (CoPS). The definition of complex products, or just complexity, is somewhat elusive. There is no widespread acceptance of a single definition (Antunes & Gonzalez, 2015; Johnson, 2009; Hobday & Rush, 1999). Instead the notion of what constitutes complexity in product systems is largely tacit in the sense that "you will know one when you see one" (Hobday & Rush, 1999).

To approach a definition of complex product systems, the term complexity must be defined. Johnson (2009) argues that complexity arises when a collection of objects are interacting. Johnson further argues that complex situations emerge when these objects are competing for some kind of resource. Brown & Eisenhardt (1997) state that complex systems involve large numbers of independent yet interacting entities. In defining complexity, Baccarini (1996) divides it into two basic dimensions; differentiation and interdependence. Differentiation represents the number of varied elements, and interdependence is the degree of interactions between these elements (Baccarini, 1996).

Hobday & Rush (1999) argue that there are three defining characteristics that separate complex product systems from mass produced goods. The first one state that complex product systems are high cost, composed of many interconnected elements, and often hierarchically structured with sub-systems who in turn are also complex. Secondly, incremental changes to one part of the system can lead to greater changes in other parts, meaning that complex product systems are non-linear through time. Thirdly, complex product systems tend to be produced in small batches or projects, which allow users to have a greater impact on the solution. The setting in which complex product systems are developed is a network of actors such as buyers, suppliers, users, regulators and government agencies who collaborate and interact (Hobday & Rush, 1999). The role of governments regarding firms developing complex product systems is both direct and indirect, where an example of direct involvement is government subsidies and an example of indirect involvement is technical and safety standards (Davies & Brady, 1998).

While a definition of complex product systems is not established, most researchers agree that they are high-technology, capital intensive products produced in small batches tailored to specific requirements of customers (Davies & Brady, 2000; Hobday, 1998). Examples of complex product systems include air traffic control systems, baggage handling systems, satellites and intelligent buildings.

Following these definitions of complexity and complex product systems, a pattern can be distinguished. Complexity exists when multiple entities interact, creating interdependencies. Thus, by extension, a product system exhibits complexity when it entails multiple varied interdependent elements. These elements can be e.g. customized components in a product system, or stakeholders to the product system such as regulators, collaborators or customers.

2.1.3 Strategic positioning through stakeholder management

As stated earlier, a strategic position is when a firm can differentiate itself from competitors in areas that allow the firm to satisfy customers. One such area could be the products, but since complex products are often produced in batches and tailored to the specific needs of the users, the company producing them might lack the ability to fundamentally change the product characteristics as a way to attain a strategic position. Furthermore, in a dynamic industry where changes are taking place at a structural scale, the company's ability to influence the industry structure to attain a strategic position is limited in the short term. Phillips et al. (2010) argue that the source of constraints on the firm in the external environment are stakeholders. Considering that firms offering complex products often interact with multiple stakeholders, a way for such a firm to position itself strategically is to manage the relationships between the firm and its stakeholders.

Managing stakeholder relationships is a concept widely explored in stakeholder theory. It states that the firm has obligations toward multiple stakeholders, internally and externally, that needs to be fulfilled to ensure the firm's survival. While the fundamental idea of stakeholder theory and stakeholder management is clear, the problem lies in defining and classifying the stakeholders. Various attempts at defining what constitutes a stakeholder can be found in literature. One of the most cited definitions of the stakeholders to a firm leads: "those groups and individuals who can affect, or are affected by, the achievement of an organization's objectives" (Freeman, 2010).

The definition by Freeman (2010) is very broad since hypothetically anyone or any group could fall under that categorization, a fact that is emphasized by Mitchell et al. (1997). They argue that the definition lacks reciprocity and that "stake" could mean anything. In attempting to clarify the term "stake", they differentiate firstly between claimants and influencers of the firm, and secondly between actual or potential relationships. Claimants have legitimate or illegitimate claims upon the firm and influencers have the power to affect the firm. These two groups may be overlapping but can also exist separately. The second distinction states that a "stake" is not bound to current relationships but must incorporate latent, or potential, stakeholders as well (Mitchell et al., 1997).

2.1.3.1 Stakeholder identification and classification

Identification of stakeholders can be done in terms of their attributes. Power, legitimacy and urgency are three attributes that can be used to identify and classify stakeholders (Mitchell et al. 1997), see Fig. 1. Power is the ability of those who possess it to realize their desired outcomes. Legitimacy speaks to the validity of actions from a normative perspective. Urgency is the degree of immediate need for attention. If stakeholders possess one or several of these attributes, they can be categorized differently.

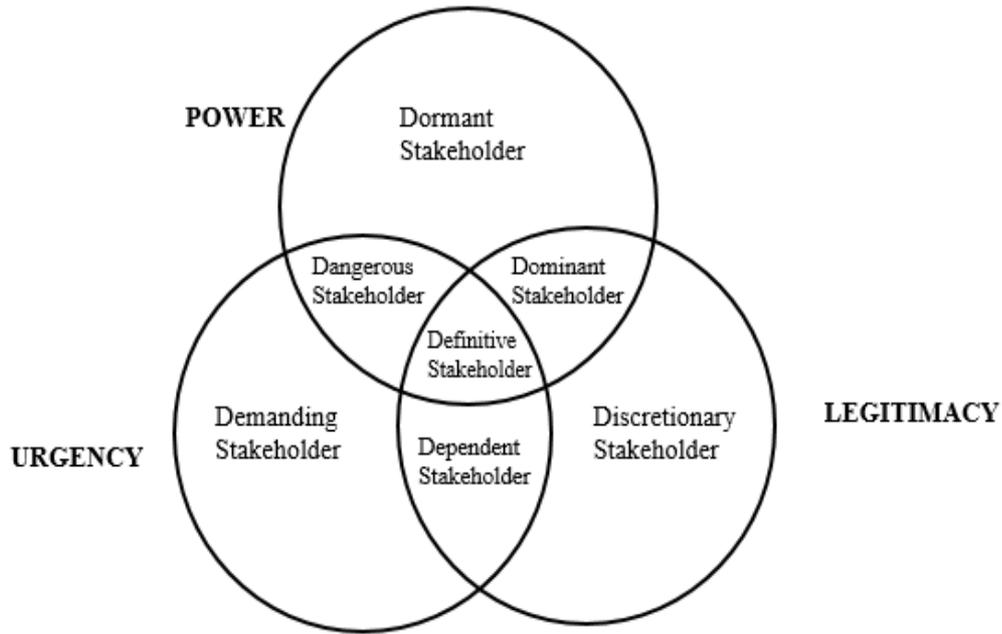


Figure 1: Stakeholder classifications according to attributes (recreated from Mitchell et al., 1997).

Below follows descriptions of the seven classes of stakeholders proposed in the stakeholder salience framework by Mitchell et al. (1997).

Dormant stakeholders

Possess power to wield their influence, but lack legitimate relationships and urgent claims on the firm. The interactions between dormant stakeholders and the firm are few to none. An example of a dormant stakeholder could be former employees.

Discretionary stakeholders

Possess legitimacy, but lack both power and urgent claims. Characteristic for this group of stakeholders is that there is no need for an active relationship between the firm and the stakeholders, rather a relationship is optional. Examples of discretionary stakeholders could be beneficiaries of corporate philanthropy.

Demanding stakeholders

This group of stakeholders have urgent but illegitimate claims on the firm and lack the power to gain recognition for their claims. Generally, this group of stakeholders are perceived as irritating but harmless in the eyes of the firm. An example of a demanding stakeholder could be a lone demonstrator with unfounded protests.

Dominant stakeholders

Possess the attributes power and legitimacy, assuring their influence on the firm. Regardless of dominant stakeholders' intentions to act on potential claims, their importance for managers of the firm is clear. For example, a public affairs office is a manifest of firms' acknowledgement of said importance.

Dependent stakeholders

This group of stakeholders have both urgent and legitimate claims on the firm, but lack power. Thus, they need to rely on others to execute the claims, hence the characterization as dependent. If dependent stakeholders can catch the attention of dominant stakeholders, their claims will be ensured the attention they crave.

Dangerous stakeholders

Possess power and urgency, but lack legitimacy in the claims posed on the firm. These stakeholders are characterized as dangerous because they often use illegitimate means to advance their claims. An example of dangerous stakeholders are wildcat strikers, which are unionized workers striking without the approval of the union.

Definitive stakeholders

This group is dominant stakeholders who moreover possess urgent claims upon the firm. Thus, the priority of this stakeholder group's claims becomes immediate for the firm.

The seven classes of stakeholders can be categorized further. The first three classes, where the stakeholder groups possess only one of the three attributes, can be labeled latent stakeholders. Latent stakeholders receive little attention and acknowledgement from the firm, and vice versa (Mitchell et al., 1997). The following three classes, where the stakeholder groups possess two of the three attributes, can be labeled expectant stakeholders. Expectant stakeholders are described as taking an active rather than passive stance in regards to the firm, which also grants them a higher level of responsiveness from the firm towards their interests (Mitchell et al., 1997). Regarding the last class, definitive stakeholders, Mitchell et al. (1997) emphasize that any expectant stakeholder who manages to acquire the missing attribute becomes a definitive stakeholder.

2.1.3.2 Stakeholder importance for firms offering complex products in a dynamic industry

To strategically position itself in a dynamic environment, a company with complex products needs to focus on particular stakeholder groups and more specifically the management of the relationships with these groups. The stakeholder groups government, the public and potential employees seem to be of high importance to firms offering complex products in a dynamic environment. The reason for their importance and their impact on firms offering complex products is discussed in the following sections.

Government decision makers

Governments become involved with firms offering complex products for a number of reasons. These include safety, international standards, prevention of monopolistic abuse and other strategic reasons (Hobday, 1998). Furthermore, the intensity of government involvement may shape the direction of complex product firms (Hobday, 1998).

The purpose of corporate political activities is to influence government policy favorably for the organization in terms of public policies or firm performance (Hallahan et al., 2007). Regulations, government purchasing, exit and entry barriers, corporate cost structures, taxes and consumption regulation are examples of actions government can take to impact market environments (Hillman et al., 2004). Government decisions can therefore be classified as major uncertainty factor for organizations as it shapes the competitive environment.

Corporate political actions can be proactive and reactive. Weidenbaum (1980) describes the proactive strategy as public policy shaping. Hillman & Hitt (1999) distinguish between transactional and relational approaches. The transactional approach focuses on specific issues

and the relational approach focuses on long term relationships where organizations perceive high government policy dependencies. The information strategy of corporate political action revolves around providing targeted political decision makers with statistics, research or other information within relevant fields. Government can also be targeted “bottom-up” through a constituency strategy by influencing the public (Hillman & Hitt, 1999).

The public

A second stakeholder group that has a stake and therefore also the ability to impact firms is the public. The public is defined as “ordinary people, especially all the people who are not members of a particular organization or who do not have any special type of knowledge” (General public, 2018).

An essential aspect of the public for organizations is legitimacy. In the context of stakeholders and political associations, Knoke (1985) define legitimacy as “the acceptance by the public and by relevant elite organizations of an association’s right to exist and to pursue its affairs in its chosen manner”. The public holds great power in terms of sociopolitical legitimacy which is the determinations of right and wrong based on existing norms and laws (Aldrich and Fiol, 1994). Thus, the public holds power over firms as the group can influence other stakeholder groups. However, Deephouse (1996) argues that journalists and mass communication through media can influence the opinion of the public.

The stake of the public in organizations is not only to determine what is socially legitimate but the group also have the power to impact politics through public elections. However, from a more local perspective organizations are a part of an ecosystem including people, organizations and governments in the local area. In this ecosystem, an objective of firms is to be an employer for the public in the area.

Potential Employees

The importance of possessing the right capabilities and acquiring new knowledge is a topic widely discussed. One of the most notable works in this area is Cohen and Levinthal’s concept of absorptive capacity. Absorptive capacity is the ability of a firm to recognize the value of new, external information, assimilate it and apply it to meet new market objectives (Cohen & Levinthal, 2000).

This capability becomes especially important for a firm when the industry is changing, which is emphasized by Prahalad & Hamel (1994) who state that the nature of industry transformation require firms to rapidly acquire new competencies and possibly dispense with old ones to adjust to the new reality. Radical changes in the external environment of a firm can force it to largely renew its capabilities (Davies & Hobday, 2005).

The stakeholder group potential employees is thereby important to consider for firms who operate in a changing industry. Furthermore, if a firm in a changing industry is offering complex products, which tend to be of high technological sophistication and where possessing the right capabilities is crucial, the importance of the stakeholder group potential employees is further elevated.

2.2 Stakeholder communication

Communication is a strategy for managing stakeholder relationships. In strategic management theory, there are several models describing firms’ perspective of stakeholders and their relations. Cornelissen (2017) argues for a widespread adoption of the stakeholder

management model viewing the relationship between the groups as interdependent. The perception of mutual dependencies of stakeholder relationships increase the importance for sustainable stakeholder relations. In the establishments and nurturing of key stakeholder relationships, communication is essential (Cornelissen, 2017). Thus, for the communication to be meaningful it cannot be of the random nor inattentive type, instead it must be strategic.

2.2.1 Communication as a strategy

Strategic communication is defined by Hallahan et al. (2007) as “the purposeful use of communication by an organization to fulfill its mission”. From this definition, it can be understood that the strategic communication must be coherent with the corporate strategy in order for organizations to successfully position themselves among different stakeholder groups and reach corporate objectives.

Globalization combined with digitalization have changed market boundaries from a smaller local competitive environment to worldwide markets. In the fight for attention from stakeholders between organizations, the work of communicating is becoming increasingly important for organizations. Argenti et al. (2005) argues that organizations with high organizational complexity require constant communication to diverse target groups. The communication orientation with the objective to build long-lasting and sustainable stakeholder relations require clear, consistent and repetitive messages. Alignment of communication and corporate strategy together with the need of communication consistency towards stakeholders require a higher level of overall coordination of communication strategies. Consolidation of communication disciplines is stated by Hallahan et al. (2007) to be a strategic communication trend enabling communication efficiency and synergies. The strategic importance of communication has enabled the topic to climb to the top management decision making level of organizations (Cornelissen, 2017). For the senior management to make informed decisions, knowledge about communication must be expanded across the border of the communication department to the top management. Organizations with top management that understands and prioritizes communication are more likely to leverage their performance through communication.

2.2.2 Factors impacting strategic communication

Constant, consistent and strategically correct communication towards stakeholders is established to be essential for the communication itself. However, the action of purely communicating strategically towards stakeholders is no guarantee for successful communication. Argenti & Druckenmiller (2004) have identified three factors - legitimacy, brand, and reputation - influencing strategic communication.

Legitimacy

In stakeholder communication, the legitimacy of the firm can be considered an essential basic factor for communication and enabling for firms to impact their stakeholders.

Corporate legitimacy is defined by Palazzo & Scherer (2006) as “the generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs, and definitions”. The definition implies that organizations must pursue socially acceptable goals in a manner that is socially acceptable in order to be perceived as legitimate.

Mutual dependencies between organizations and their stakeholders is argued by Cornelissen (2017) to increase the importance to be found legitimate by both market and non-market stakeholder groups. Zerfass and Viertmann (2017) argue that firms that is not perceived as

legitimate have difficulties impacting their stakeholders resulting in reduced strategic flexibility. Thus, firms with complex products can be argued to be increasingly dependent on being perceived as legitimate based on that these firms have a larger number of key stakeholders with the ability to impact firms.

Brand

A corporate brand is defined by Argenti & Druckenmiller (2004) as the holistic expectations or aspirations of what a company will deliver in terms of products, services and customer service. These expectations of firm supply can be seen as a result of previous firm performance in combination with strong and efficient strategic communication about the performance. Thus, a firm with positive expectations by a large number of stakeholder can be argued to have a stronger communication and obtaining more attention from stakeholders than a firm with negative expectations from a smaller number of stakeholders.

Argenti & Druckenmiller (2004) argue for a trend pointing towards the view of a firm as a brand rather than an organization in itself. The increased importance of a strong brand can be related to reasons such as increased speed of product introduction forcing customers to rely on the brand or increased global activity where the brand functions as a coherent entity steering the overall firm in the right direction. In terms of communication, Argenti & Druckenmiller (2004) state that through the increasingly diverse communication channels a greater need for a strong brand have emerged. According to Zerfass and Viertmann (2017), both brand and reputation could be considered intangible firm assets.

Reputation

A firm's ability to meet the expectations of stakeholder groups set over a longer period lays the foundation of the corporate reputation (Argenti & Druckenmiller, 2004). Thus, the reputation is the perception of the firm ability to supply according to the expectations on the organization long term. The authors further argue that the reputation consists of multiple images of the organization build up over time. A damaged reputation can quickly hurt stakeholder loyalty, decrease financial performance and threaten the organizational viability (Argenti & Druckenmiller, 2004).

In this section, three factors that are impacting the result of strategic communication have been addressed; legitimacy, brand and reputation. Corporate legitimacy is the foundation of communication as a strategy as it enables the firms to impact their stakeholders. The corporate brand represents the perception of the firm and the expectations from stakeholders in terms of firm delivery. These expectations can be seen as a measure of the firm's attention and therefore the strength of the communication by the firm. Finally, the reputation is the ability of a firm to deliver long term and therefore represent the firm's perceived robustness by stakeholders.

2.2.3 The process of strategic communication

In the context of a dynamic industry and product complexity, the management of stakeholders have been established as a strategy for strategic positioning for firms. The execution of this strategy evolves around the process of strategic communication. Argenti et al. (2005) developed a framework strategic communication consisting of four key categories; Strategy, Messages, Constituents and Feedback. These four categories, forming an iterative process, are illustrated in Fig. 2.

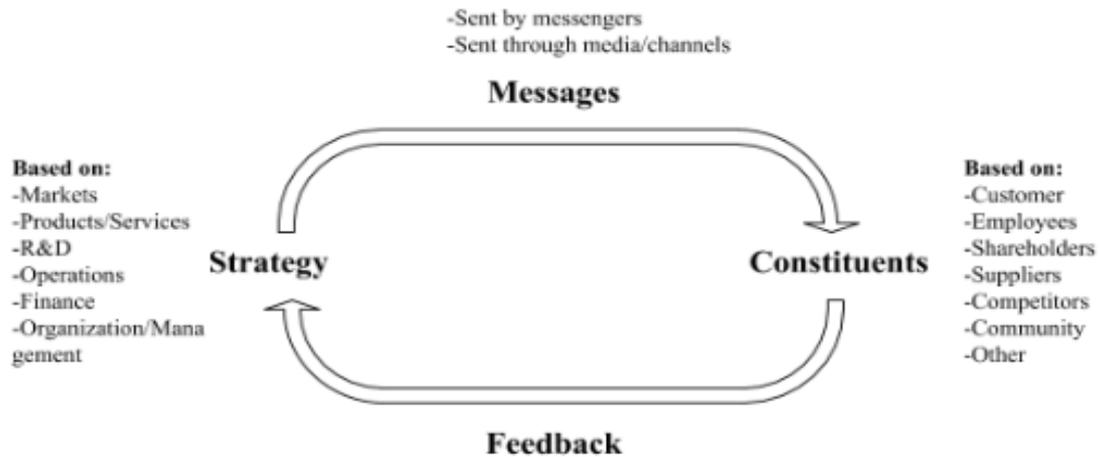


Figure 2: The framework for strategic communication (recreated from Argenti et al., 2005).

Strategy

Argenti et al. (2005) define the category Strategy as the overall strategy forming the basis of the information communicated. Initially, the key objective and goal of the message must be identified as it controls all other variables including operational and marketing elements (Cornelissen, 2017). From the key objective, the communication message can be developed. However, relevant strategy objectives are differentiated between stakeholder groups. Argenti et al. (2005) argues that through communication, the overall strategy can be divided into pieces and sold to the right audience.

During the recent years, the communication demands from stakeholder groups have changed. The influence of digitalization on strategic communication have impacted firms' communication. Efficiency, proximity, speed and transparency are stated by Gilan & Hammarberg (2016) to be essential in the digital world. Thus, for strategic communication it can be argued that firms are forced to allow stakeholder groups closeness and insight in firms' strategic initiatives.

Messages

The strategy chosen to be conveyed require a consignor and a channel or media to be delivered through, represented by the category Messages. Cornelissen (2017) states that the aim of channel choice is to find the most effective and efficient tool to reach the target audience. The choice of channel is a critical link between the company's strategy and the stakeholders' understanding and responses to the strategy communicated (Argenti et al., 2005).

Previously, organizations used standard mediums in all types of communications. However, the impact of digitalization and technology in strategic communication have increased the variations of communication channels. Deloitte (2017) argue for an increased gap in the adoption of technology between the technology available, individuals, businesses and public policies where the public policies are adopting technology the slowest. The different rate of adoption can be argued to impact the choice of communication channel to be used for stakeholder groups.

Another factor impacting the channel used for stakeholder communication is the change in human behavior emerging along with the digitalization. According to Deloitte (2017), US citizens are looking at their mobile devices more than 8 billion times per day in total. Gilan & Hammarberg (2016) argues that to capture the attention of the individuals, firms are forced to shift their focus of communication to the digital shape.

The larger amount of communication channels available is argued by Cornelissen (2017) to increase the number of channels firm must communicate through to reach their stakeholder groups. To manage the additional work, increased pressure is put on communication efficiency. One strategy for increased efficiency is suggested by Cornelissen (2017) to in a coordinated and consistent manner communicate the same content differently in various channels as the messages in the different channels can complement each other.

Constituents

The constituents, or the stakeholders, all have different interests, priorities and stakes in the organization. Thus, the information communicated must be relevant to the targeted group. Crane & Livesey (2003) distinguish between standardized and customized messages towards stakeholders. The standardized messages emphasize core value and send out a coordinated message with the purpose of maintaining a strong brand towards stakeholders. Customized messages on the other hand are used when an organization is managing several stakeholders. Standardized messages can for example be used on global markets whereas the messages must be tailored to suit local markets. However, it is essential for organizations to communicate coordinately since individuals can belong to several stakeholder groups simultaneously.

Feedback

Previously, the major part of strategic communication was executed one-way, from the organization to the stakeholder but digital communication has increased two-way communication (Cornelissen, 2017). In two-way communication, the information between the organization and the stakeholder are directed both ways, allowing instant feedback on communication activities. Feedback enables strategic communication to be an iterative loop between the four key categories, as opposed to a streamlined process (Argenti et al., 2005).

Previously, gathering, measuring and analyzing communication effectiveness has been somewhat difficult and complicated. Reinold & Tropp (2012) present several frameworks in the theory of measuring communication. One of the models is based on Kaplan & Norton's (1996) framework for measuring organizational performance and then further developed by Vos & Schoemaker (2004) processing a balanced scorecard for measuring communication quality. Gathering of data for soft variables can according to Cornelissen (2017) be done qualitatively through for example interviews or quantitatively based on scales or ratings. The methods require comparable indicators, and finding and validating these indicators are big organizational challenges. "Improving the measurement of communication effectiveness to prove value" was according to Berger & Meng's (2012) study considered one of four most relevant issues in the field. However, new digital communication tools collect and present data for organizations enabling easier access to that information. Despite this, many firms do not utilize the opportunities the digital tools enable.

Feedback from the constituents determines the success of communication activities and, due to the correlation to organizational strategy, the success of the overall strategy (Argenti et al., 2005). Organizations can actively collect feedback, measure variables for data analysis or collect it indirectly through for example dynamic stock values. Data measured and collected over time work as the basis for communication and overall strategy decision making. In addition to use data for decision making, Deloitte (2017) argues for collection of data in order for firms to better understand and analyze stakeholders as increased understanding could enable firms to better customize stakeholder communication according to the needs of the groups or individuals.

2.3 Summary of the Theoretical Framework

The chapter started with describing strategic positioning, which is where a firm can successfully distinguish itself from competitors in areas that allow the firm to satisfy customers. Achieving a strategic position is dependent on industry characteristics. If the industry structure is given, the company can position itself through identifying how it can cope with industry forces. If the industry is changing, a new strategic position may appear. The company can also try to reshape the existing industry structure.

Complex product systems are high value products and high technology constructs where design, management, and systems engineering and integration are emphasized in production. Firms offering complex product systems need to consider large networks of stakeholders.

Considering that firms offering complex products often interact with multiple stakeholders, a way for such a firm to position itself strategically is to manage the relationships between the firm and its stakeholders. Stakeholders can be identified and classified in terms of the attributes power, urgency and legitimacy. The stakeholder groups government, the public and potential employees are of high importance to firms offering complex products in a dynamic environment.

Communication is a strategy for managing stakeholder relationships. For the communication to be meaningful it cannot be of the random nor inattentive type, instead must it be strategic. Three factors influencing strategic communication are legitimacy, brand and reputation. Legitimacy is about the desirableness of actions from a normative perspective. Brand is the holistic expectations or aspirations of what a company will deliver in terms of products, services and customer service. Reputation is founded in a company's ability to meet the expectations of stakeholder groups set over a longer period.

The process of strategic communication is iterative and consists of four key elements; strategy, messages, constituents and feedback. Strategy includes the key objective and goal of the message communicated. Messages include the channel or media through which the communication will be conveyed. Constituents are the recipients of the communication, who all have different interests, priorities and stakes in the organization. Feedback is about gathering, measuring and analyzing data regarding communication effectiveness, which has been further enabled through digitalization.

3 Methodology

In the following chapter, the research journey of this study will be presented. Furthermore, there will be a description of the research design for this study. The methodology for data collection will be motivated as well as the people and firms from which the data was collected. Finally, the process for the data analysis will be presented.

3.1 The research journey

The journey for this research study started with RUAG Space AB initiating a project proposal, focusing on improvement of the firm's strategic communication. During the last year, RUAG Space's communication department has coped with three major changes in both its external and internal environment. Firstly, new actors and new product demands have intensified the competition as the industry has opened up. This change has resulted in an increased number of stakeholders to actively communicate with. Secondly, on an organizational level RUAG Space has restructured the entire organization including the communication department which have changed the communication processes. Thirdly, on a strategic communication level the communication activities and the firm's communication strategy have been influenced by digitalization. Expectations of constant activity through an increased number of communication channels to reach all the stakeholders have increased the need for both efficient processes and strategic allocation of resources. In order to cope with these three major changes, RUAG Space AB saw the need to investigate improvement opportunities for the firm's strategic communication. Thus, an opportunity for a master thesis project emerged.

Initially, RUAG Space AB's desire was an investigation of the firm's current communication activities as well as an exploration of other communication tools and channels that RUAG Space could use. As the project was initiated by RUAG Space AB, a decision was taken together with the researchers to limit the project to external strategic communication with national stakeholders. The decision was based on data accessibility in combination with the highest level of relevance for RUAG Space AB. The firm directly pointed out the three main stakeholders within the national boundaries; potential employees, the public and government decision makers.

Since RUAG Space AB was not the only stakeholder in this project, the purpose of the study had to be adjusted to fit university requirements. Chalmers demand that the scope of the master thesis is related both to the particular master program but also includes a sufficient academic perspective and thereby contributes to research. To find common ground for the two key stakeholders, the researchers decided to theoretically problematize RUAG Space AB's project idea to find an appropriate research area. The researchers read up on relevant theory that could be related to RUAG Space and stated the problem. The fields of theory suitable for the study was identified as; strategic positioning, CoPS, stakeholder theory and strategic communication. Parallel to the initial literature review, the researchers were also introduced to RUAG Space and the space industry through company presentations as well as industry and firm documents. The understanding of both the research context and previous research within the area of study was crucial for the problem understanding and thus, the establishment of the research aim and questions. However, along with the literature study and data collection, the research questions changed to best suit the study.

To investigate the field of communication in relation to stakeholders and complex products, the researchers decided on interviews as the best method for data collection. The researchers together with RUAG Space AB agreed that the majority of the data collection would be done within RUAG Space. Several interviews were scheduled with relevant people working at the company. However, the researchers identified a need to collect external data that could give nuance to the interview answers from RUAG Space. Interviews were therefore also conducted with stakeholders to RUAG Space AB and other firms that were considered relevant based on product complexity and data availability. When all interviews were conducted, the theoretical framework was fully developed and finalized.

3.2 Research design

The investigative nature of the study, entailing in depth examination and an understanding of underlying assumptions supports a qualitative approach of the study according to Easterby-Smith et al. (2015). The theoretical field of strategic communication can be argued to be well established but strategic communication as a tool for strategic positioning for firms coping with industry changes and product complexity can be considered a new angle of the research field. Researchers distinguish between studies focusing on building theory and testing theory through studies. Saunders et al. (2009) argue for study situations when theory could be generated; in studies focusing on nascent theory areas or when previously developed theory fields are viewed from a different angle. Thus, the study aims to build theory rather than test previously established relationships between factors, aligned with the argumentation by Edmondson and McManus (2007) of a qualitative research approach.

3.2.1 Research purpose

The purpose of this master thesis was to perform a study that examines the use of communication as a strategic tool by firms offering complex products to achieve a strong position within a dynamic industry. This purpose as well as the research questions were based on an empirical problem that was theoretically problematized. Since the project was initiated by RUAG Space, the course of action was automatically steered in the direction of a case study. The use of a case study as a strategic fit for this particular study is supported by Robson & McCartan's (2016) definition of a case study: "*A strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real-life context using multiple sources of evidence.*" Eisenhardt and Graebner (2007) further argue for inductive theory development, where theory is developed through recognizing patterns within and across cases, as one of the main reasons to use case studies in research.

3.2.2 Research strategy

Case studies can according to Yin (2003) be used for explanatory, descriptive and exploratory research purposes. In the formulation phase of this study, the researchers' wanted to look at strategic communication in the environment of RUAG Space. For the description of RUAG Space's contextual environment, the research areas CoPS, strategic positioning and dynamic industries were identified. In this contextual environment the theoretical field of strategic communication was examined which is in line with Robson & McCartan's (2016) description of exploratory research as the investigation of a phenomena in a new way.

Defining the research questions and the focus of the research is argued by Eisenhardt (1989) to be the initial step in an exploratory case study. Thus, without a research focus, the amount of data collected can become overwhelming. The initial steps of this research consisted of broadly defining the research focus and research questions as well as reviewing the literature to find suitable areas of research to fit the contextual environment of RUAG Space, in line

with Eisenhardt's (1989) case study process. However, during the process of the study the focus and research questions changed due to the collection of additional information. Rather than a pitfall, the adaptability and flexibility of exploratory research is considered a major advantage for exploratory research strategy. Adams and Schvaneveldt (1991) state that it is essential for exploratory researchers to be willing to change the direction of the study as new information is constantly discovered.

3.2.3 Design of the case study

The idea of a case study is to look at one or a smaller number of organizations in depth (Easterby-Smith et al., 2015). Theory about research design distinguish between single case and multi case studies. A single case study enables a deeper understanding of the specific case while a multi case study allows for confirmation and generalizability (Yin, 2003). This case study was based on one main case and three less comprehensive contrasting cases, illustrated in Table 1. The main case was performed at RUAG Space and the contrasting cases at AstraZeneca, GKN Aerospace and Saab Technologies.

	Company	Industry
Main Case	RUAG Space	Space industry
Contrasting Cases	AstraZeneca	Pharmaceutical Industry
	GKN Aerospace	Aerospace Industry
	Saab Technologies	Defense industry

Table 1: Illustration of the study's case structure.

The structure of the case study was determined based on the desire to combine advantages of both single and multi-case studies. The decision to look at RUAG Space in depth was made to get a wider and deeper understanding of the firm and its surrounding environment. However, a limitation with using a single case study is the limited opportunity to generalize the findings. Yin's (2003) argumentation that a multi case study is preferred over a single case study, supports the decision of additional smaller cases in this study to nuance the data from the main case. Thus, the intention with the contrasting cases was to overcome the weaknesses of a single case study and add perspective.

RUAG Space as the object for the main study was predetermined as the firm initiated the project. The selection criteria for the contrasting cases was established after the research focus and purpose was established. Thus, the research angle of communication within the contextual environment of a dynamic industry and product complexity set the conditions for the sampling of contrasting cases. Choosing cases which are likely to replicate or extend the emergent theory is argued by Eisenhardt (1989) to be the goal of theoretical sampling. However, the various industries the firms operate in and the different sizes of the firms are factors hindering the comparison of the firms. Another factor hindering full comparison of the firms was the limited data collected in the contrasting cases. Thus, all topics in the study was not covered in each case, the data in the contrasting cases served as comparison for various subjects rather than an overall firm comparison.

3.3 Data Collection

Saunders et al. (2009) argue that reviewing literature and interviewing subjects are two main approaches to conduct exploratory research. Thus, both the approaches were used in this study.

3.3.1 Literature Review

A literature review was conducted to get an understanding of the theoretical fields of the chosen project scope and create an appropriate foundation for the research project. The sources of information for the literature study was mainly academic articles. Easterby-Smith et al. (2015) argue for increased reliability of academic articles in relation to other sources as the articles have been reviewed and approved by several researchers. In the evaluation of academic articles for this study, four conditions were considered which is aligned with conditions for article evaluation identified by Easterby-Smith et al. (2015). Firstly, the credibility and recognizability of the authors were considered. Secondly, the timeframe between the development of the article and the use of the article as a source which simply could be described as the age of the article was reflected upon. Thirdly, the purpose of the article was considered by reviewing the article abstract. Fourthly, the researchers evaluated the credibility and accuracy of the article based on the number of citations for each article. Exceptions on the fourth condition were made for more recent articles where the other factors then were considered increasingly important.

The information was mainly retrieved from Google Scholar and the Chalmers Library. Complex product systems, dynamic industry, strategic positioning, stakeholder theory, strategic communication, legitimacy, brand and reputation were search terms that was used to find relevant theory. From previous theoretical knowledge within the project scope together with the literature study, a framework for the study was developed. The framework was applied and compared with the empirical data collected, both from RUAG Space and the contrasting cases.

3.3.2 Interview design

The method for data collection in this qualitative study was semi-structured interviews. Semi-structured interviews are non-standardized interviews with open questions and where the order of the questions can change depending on the conversation (Bryman and Bell, 2003). In the semi-structured interviews performed in the study, the respondents were given open ended questions and the opportunity to respond freely. For relevant topics, the interviewees were asked additional questions to further elaborate. The flexibility of semi-structured interviews is argued by Saunders et al. (2009) to be one of the major advantages. However, due to the large flexibility of the questions, the answers can be difficult to compare.

The interview questions for the semi-structured interviews were developed based on the initial literature review. From the literature review combined with the introduction to RUAG Space and its contextual environment relevant questions could be developed. The questions and focus of the interviews were tailored for each interview based on the position and knowledge possessed by the interviewee.

3.3.3 Sampling of interviewees

The majority of the interviews were conducted at RUAG Space, as it is the main case in the study. The interviewees were selected together with the supervisor at RUAG Space and chosen based on their expected ability to provide information allowing fulfillment of the purpose of the study.

The RUAG Space interviewees were three individuals from the communications department, three from the HR department, one working with public affairs, one working with digitalization and one responsible for the operations in a country, see Table 2. The purpose of the interviews conducted with the communications department was to understand the structure of the communications department and how RUAG Space communicates with stakeholder groups including the focus of the information shared, channels used, and how the information is tailored towards different stakeholder groups as well as how RUAG Space’s environment impacts the communication. The interviews with the representatives from the HR department aimed to collect information about HR processes, especially focused on recruitment, and understand how the HR department and communications department work together in this matter. In the interview with the public affairs representative at RUAG Space, the objective was to collect information about the stakeholder group government and RUAG Space’s relationship with that group. Further, in terms of digitalization, an understanding of the digital process at RUAG Space was of interest as well as a discussion about how digital tools could be used in strategic communication. Finally, the interview with the individual responsible for operations in one country was conducted to understand the firm’s overall strategy and the perception of communication as a strategic tool at the top management level of the firm.

Title	Date of interview	Interview code
Manager Public Affairs	2018-03-02	1
Senior HR Manager	2018-03-07	2
Manager Communications	2018-03-08	3
HR Manager & Talent Acquisition Manager	2018-03-14	4
Senior Manager Digitalization	2018-03-15	5
Chief Executive Officer RUAG Space AB	2018-03-15	6
Manager Communications	2018-03-16	7
Vice President Communications	2018-03-21	8
Vice President HR	2018-03-23	9

Table 2: Interviews conducted at the main case company, RUAG Space.

The purpose of the interviews at the contrasting companies was to understand how firms operating in similar conditions work with communication. The researchers were also interested in understanding how the firms cope with product complexity and industry changes in the communication towards the three stakeholder groups government, the public and potential employees. The interviewees in the contrasting cases all represent communication departments and since communication as a tool for strategic positioning in a specific contextual environment is the center of this study, the interviews added perspective and contrasted the data collected at RUAG Space. See Table 3 for the interviews conducted at the contrasting companies.

Title	Company name	Date of interview	Interview code
Associate Director Communication	AstraZeneca	2018-02-28	10
Public Affairs Manager	GKN Aerospace	2018-03-08	11
Vice President & Head of Communication	Saab Technologies	2018-03-28	12

Table 3: Interviews conducted at the contrasting case companies.

In addition to the main case and the contrasting cases, two interviews were conducted with stakeholders to RUAG Space, see Table 4. One interview was with the head of communication at the Swedish National Space Board, where the purpose was to increase the understanding of the stakeholder group government and how this group relates to the Swedish National Space Board in terms of knowledge sharing and decision making. In the second stakeholder interview, with a news reporter, the researchers aimed to establish the perception of news value and the conditions news must fulfill to be reported.

Title	Company/Organization name	Date of interview	Interview code
Head of Communication	Swedish National Space Board	2018-03-21	13
Journalist	Östgöta Correspondenten	2018-03-22	14

Table 4: Additional interviews conducted in the study.

In total, 14 interviews were conducted in the study. Nine of the interviews were conducted with RUAG Space employees, three with employees in the contrasting case firms and two with RUAG Space stakeholders.

3.4 Data Analysis

All the interviews conducted in the study were recorded. Immediately after each interview, the researchers took time to discuss the general impression of the interview to establish if similar interpretations had been drawn from the conversation. Further, all the interviews were transcribed, in line with Easterby-Smith et al.'s (2015) argumentation for the importance of preparing and organizing the collected data before starting the analysis.

In the process of analyzing case study data, Eisenhardt (1989) distinguish between within-case analysis and identification of cross case patterns. In within-case analysis, unique patterns of each case are identified. Due to the design of this case study, the full within-case analysis was only performed at the main case, RUAG Space. Thus, the contrasting cases was used for cross-case analysis where patterns identified in the main case was compared to the data collected in the contrasting cases to identify patterns.

In the analysis of the data in the study, grounded analysis described by Easterby-Smith et al. (2015) seemed suitable for both the within-case analysis and then further for the identification of cross-case patterns. The initial phase of the analysis was the familiarization with the data where the transcripts of the data was scanned to get an overview of the data collected. Further, the researchers coded essential parts of the data to establish a structure and enable identification of patterns. The use of coding as a concept for identification of the essence in

data is aligned with the process of grounded theory by Easterby-Smith et al. (2015). The codification of the data was followed by conceptualization.

According to Saunders et al. (2009), conceptualization of data consists of two different parts; establish the concept/themes and attach data to those themes. The themes for this analysis derived from the theoretical framework and was identified as; Strategic positioning, Complex products, Dynamic Industry, Stakeholders, Context General/Communications/HR, Strategic communication, Brand, Legitimacy, Reputation, The Public, Government Decision Makers and Potential Employees.

Conditions for attachment of the data was based on the underlying meaning of the data rather than identification of the exact words or name of the themes. In the attachment of the data, the data from the main case was held separate from the contrasting cases. Thus, within-case analysis, based on Eisenhardt's (1989) theory, could be performed for the main case to identify unique case patterns before the identification of cross-case patterns commenced.

4 Empirical context

This chapter will introduce the companies where the main case study and the contrasting case studies have been performed, as well as the companies' corresponding industries. RUAG Space, which is the main case, will be given a more extensive contextual background in terms of internal organization of the firm as well as industry changes. The contrasting cases will have a shorter introduction and their corresponding industries will be described briefly.

The chapter starts with a description of the space industry where trends and changes are addressed. Subsequently, RUAG Space is introduced and the structure of the organization is described including internal changes.

4.1 The space industry and RUAG Space

Changing conditions in the space industry

The space industry can broadly be defined as the economic sector providing goods and services related to space (Schrogl et al., 2011). Within this sector companies engage in research, development and manufacturing of space-enabled products, as well as supporting or related services.

The space industry is increasingly transforming towards a higher involvement by the private sector, a phenomenon often referred to as "New Space" (Paikowsky, 2017). While the actors of "Old Space" primarily engaged in space activities for military reasons, international status, or technological development, these private actors have a new way of looking at space - namely as a source of profit. The primary driver of the private entities in New Space is thus a cost-benefit factor (Paikowsky, 2017).

In the past decade the revenue generated by the space industry has doubled to approximately \$350 billion, and estimates include that the industry will bring in \$1.1 trillion by 2040 (Morgan Stanley Research, 2017). While the definition of New Space is elusive, it has created a renewed hype of the industry with heavy names such as Elon Musk and Jeff Bezos contributing with their endeavors SpaceX and Blue Origin.

RUAG Space

RUAG Space, one of five divisions of the Swiss technology company RUAG Holding, has a leading position as a supplier of space products in Europe and is increasingly strengthening its position in the U.S. The remaining four divisions of the parent company RUAG Holding are Aviation, Defense, Ammotec and Aerostructures. RUAG Space employs approximately 1400 people in Switzerland, Sweden, Austria, Finland, Germany and the U.S., and offers products within three product groups; Electronics, Spacecraft and Launchers.

RUAG Space serves both the commercial sector as well as the public sector. In the public sector RUAG Space offer their products to state-governed space exploration projects. In Europe, these projects are governed by the European Space Agency (ESA). ESA is responsible for developing the space capabilities of Europe and for ensuring that space related activities is beneficial to both EU citizens and the world. It consists of 22 member states and coordinates the resources, both financial and intellectual, of its member states to create and undertake programs that are beyond the capacity of a single member state (ESA, 2018).

RUAG Space in Sweden

RUAG Space achieved its foothold in Sweden through acquiring Saab Space in 2008 (ESA, 2008). In Sweden the company has two production sites, in Gothenburg and Linköping respectively, with headquarters in Gothenburg. The Swedish sites are part of the subsidiary RUAG Space AB. The products manufactured in Gothenburg are divided into three production units; Microwave, Antenna and Digital, and falls under the product group Electronics (RUAG Space, 2018a). The site in Linköping was renewed in 2017 and is a core site in the manufacturing process of launcher adapters, dispensers and satellite separation systems, which falls under the category Launchers (RUAG Space, 2018b).

Reorganization of RUAG Space

Not only is the space industry exhibiting changes, RUAG Space is undergoing changes internally as well. RUAG Space is currently undergoing an internal organizational change. Recently (Jan 1st, 2018), the organizational structure has been adapted to a matrix organization centering on the three global product groups; Electronics, Spacecraft and Launchers, spanning the international sites in Europe and the United States. Each country has formerly been responsible for organizing its product portfolio in terms of development and marketing as well as communication activities.

The reorganization means that the focus of each country has shifted to operations, with marketing and development of the product lines becoming more centralized. The reorganization will allow customers better access to the specific segment that appeals to them, while increasing the efficiency of R&D, marketing and sales within each segment (RUAG Space, 2017). The impetus behind the reorganization is proactive rather than reactive; it is initiated to enable growth and tackle new markets as effectively as possible [Interviewee 9].

4.2 The pharmaceutical industry and AstraZeneca

The pharmaceutical industry

The pharmaceutical industry consists of actors engaged in the discovery, development, production, and marketing of pharmaceutical drugs for medicinal uses. The industry is heavily regulated. In many countries regulatory approval is required in terms of marketing and pricing medicinal products (McGuire et al., 2007). Furthermore, the industry actors interact with people of the medicinal profession, governments and insurance groups. Comprehensive national legal frameworks have been developed to mitigate the risks related to developing, manufacturing, distributing and using medicinal products (McGuire et al., 2007).

The pharmaceutical industry is also closely monitored. Accusations and findings regarding illegal influence on health professionals, off-label promotion and pharmaceutical fraud has resulted in media and advocacy groups directing increased attention to the industry and its actors.

AstraZeneca

AstraZeneca, founded through the merger of the Swedish company Astra AB and the English company Zeneca Group in 1999, is a pharmaceutical and biopharmaceutical company with a multinational presence. The company has three strategic science centers located in Gothenburg, Sweden; Cambridge, UK; and Gaithersburg, U.S. respectively. In Gothenburg research is conducted into the entire lifecycle of a medicine including idea generation, global commercialization and product maintenance. The site employs 2400 people, and the research is focused on two of AstraZeneca's three core science areas; cardiovascular and metabolic diseases on one hand and respiratory, inflammation and autoimmunity on the other hand.

4.3 The aerospace industry and GKN Aerospace

The aerospace industry

The aerospace industry can be divided into activities concerning aeronautics, which is flight within Earth's atmosphere, and activities concerning astronautics, which is flight in the surrounding space (see space industry above). Examples of products manufactured in the industry are aircraft engines and space vehicles.

GKN Aerospace

GKN Aerospace is one of three core divisions of the global British engineering company GKN, where the other two divisions are GKN Driveline and GKN Powder Metallurgy. GKN Aerospace manufactures components for aircraft engines and aircraft systems, and employs 17000 people across 14 countries. In Sweden, the company established its presence through the acquisition of Volvo Aero in 2012 forming the Swedish subsidiary GKN Aerospace Sweden AB. The Swedish subsidiary has a production facility in Trollhättan, primarily engaged in the production of components for aircraft engine systems, and nozzles and turbines for space rockets. The Swedish operations moreover consists of a public affairs office in Stockholm.

4.4 The defense industry and Saab Surveillance

The defense industry

The defense industry consists of those engaged in the development, manufacturing and sales of weapons, security systems and military technology. The industry can be divided into commercial applications and military applications. Furthermore, certain countries affected by political instability also have substantial illegal trade of arms.

Saab Surveillance

Saab Surveillance is a business area within the Swedish aerospace and defense company Saab Group. The business area, which until 2016 was called Electronic Defense Systems, was formed in 2010 through a merger of Saab Microwave Systems and Saab Avionics. Within this business area products are developed for protection, safety, security, threat detection and decision support. The business area offers solutions in airborne, land-based and marine radar systems, electronic warfare systems, combat systems and C4I solutions. In Sweden, the headquarters of Saab Surveillance is located in Gothenburg.

5 Empirical findings

This chapter will present the empirical findings of the study. Initially, the findings about a dynamic industry, product complexity and stakeholders are presented. The impact of the contextual environment on strategic communication is further explained. The chapter ends with empirical findings about strategic communication focused on targeting the stakeholder groups government decision makers, the public and potential employees as well as factors influencing strategic communication. For each section, findings regarding RUAG Space will be presented initially followed by findings regarding the contrasting case companies.

5.1 Strategic positioning

In the theoretical framework strategic positioning is argued to impact and be impacted by industry changes, product complexity and stakeholders. Thus, findings related to each of these three areas will be presented in the corresponding sections below.

5.1.1 Dynamic industry

RUAG Space

To retain an existing or attain a new strategic position on the market is largely influenced by what is happening in RUAG Space's external environment, especially considering New Space and the accompanying new entrants in the space industry. The changing conditions means that RUAG Space needs to renew the way they are working, particularly in becoming better suited for a more commercial and global environment. RUAG Space is very aware of the changes in the industry, the challenges that arises and that they might be required to change to retain a strong position, which is illustrated by the following interview statements:

“In a rather traditional and conventional industry we’ve suddenly been dealt a new hand. Now, a lot of new actors are entering the industry [...] You have to become more commercial and lower the costs in new ways [...] and then you might not be able to work in the same way as before.” - Interviewee 2

“We need to provide global services, global capabilities, global availabilities, etc. And I would say that you need to do that in a different manner or with different patterns than by which you have served the prior more regional based organization.” - Interviewee 5

The increased involvement from the private sector naturally means a tougher competitive landscape. Intensified competition is both an opportunity and a challenge for RUAG Space; an opportunity in the sense that if they successfully adapt to changes it will ultimately lead to a stronger position, and a challenge in the sense that competitors might adapt faster. This is illustrated by the following statements by one interviewee:

“The fact that capable companies are popping up creates a tougher competitive situation for us. Competition is never evil though, it will force us to become better and thus strengthen our position on the market [...] If we don’t we will be overtaken, competitors will grow faster.”

“New Space, whatever it is, is good if we manage to keep up. Otherwise we might be outpaced.” - Interviewee 6

Adapting to a changing industry might prove difficult, especially for established firms. While the industry is changing, the old and the new way of working coexists. New actors in the space industry might already have adapted to the new way, but established firms are more bound by their previous way of working. The following interview statement illustrates that this is a major challenge for RUAG Space, who are used to the traditional way of conducting business in the space industry:

“Doing things differently on Monday and Tuesday is difficult. [...] it's a big challenge to find two different levels to drive. How to solve that I don't really know. Maybe through rough cuts by which you divide it so you have two operations, one that drives the new business and one who drives traditional business. Or maybe you can find a way to drag the whole business into a new fashion, so that you can work in a new way in the traditional parts of the industry too.” - Interviewee 6

Another changing aspect due to the New Space phenomenon is the actors involved with the industry. One interviewee highlights that the number of stakeholders has increased:

“Now we are in a commercial environment. This is a completely new world. You have so many more stakeholders.” - Interviewee 8

Contrasting companies

Changes are happening in the industries of the contrasting companies as well, although arguably not to the same extent as in the space industry. The pharmaceutical industry has in the past been associated with an industry culture where lobbying has been conducted with more direct means of persuasion, such as gifts or trips. While such activities have been eliminated, the perception of the industry might still remain:

“I believe that the pharmaceutical industry created their own problems by being too generous, they offered a lot of things several years ago, but that perception of the industry is probably still there. Like that it's a flashy industry with lots of money, that you buy trips for doctors etc. That doesn't happen today. It has changed completely.”
- Interviewee 10

At GKN Aerospace, the changes happening in the space industry are equally relevant. But also, the aeronautics segment of the industry is exhibiting change. An increasing number of people can afford to fly commercially, creating a higher demand. The military segment of air travel also shows increased demand as national security is becoming an increasingly important issue:

“Wealth is increasing in the world making flight affordable for more people, the air traffic will have doubled within 15-20 years which is a big global trend that affects us. Similarly, in the space segment new technology enables more countries and private actors to launch satellites which increases the demand in space. [...] Within the defense segment there is a geopolitical state that impacts the need of fighter plane ability.” - Interviewee 11

National security is also very applicable to Saab. It emerged from the interviews that as the flow of information has increased in society, the need of keeping information safe and secure has also increased:

“It’s not only about defending our national borders but also that we need to protect our information. Information warfare is a highly relevant topic right now which makes our communication significantly easier.” - Interviewee 12

5.1.2 The complexity of products

RUAG Space

There are different forms of product complexity. It emerged from the interviews that one type of complexity can be related to the technological sophistication of the products, i.e. a product that is high-technology can be considered complex. That type of complexity, however, is subjective because a technology that is perceived as complex by one person might not seem complex to another person. This is fittingly illustrated by the following interview statement:

“An aircraft carrier for instance is a lot more complex than a converter.” - Interviewee 6

Technological complexity can stem from the technological requirements that the products are subject to. For example, RUAG Space’s products are subject to several requirements that are shaped by the environment in which they are used, i.e. outer space. The technological complexity stemming from these requirements is illustrated by the following interview statement:

“If you compare with commercial electronics or mechanics, our products are complex because the requirements in space are unique. Thermal, vibration and radiation-wise they withstand a lot. The products handle a complex situation which results in that we work with complex technology.” - Interviewee 6

The robustness that is required of RUAG Space’s products due to the harsh conditions in space is further illustrated by the following interview statement, where the interviewee also points out that s/he does not have a background in technology-related areas:

“The products are very complex, even I who is a behaviorist realize that. Space is not a hospitable environment, it’s a vacuum that’s very cold or very warm, there’s radiation and magnetic fields. To develop products that can cope with that environment is difficult.” - Interviewee 4

Another aspect related to the technological complexity of RUAG Space’s products is that once the products have been delivered, they must work. Obviously, this is something that applies to all products, but manufacturers of other types of products may have the opportunity of support or service after delivery, which is not an option for RUAG Space. This further contributes to the already extensive requirements that RUAG Space’s products are subject to. If the products are faulty or break after delivery, the repercussions for RUAG Space will likely be severe. The following interview statements illustrate the importance of delivering products that are completely functional and working every time:

“[...] you don’t get a second chance, you can’t go up there and fix something so everything has to be tested on Earth although it will be used in space.” - Interviewee 4

“We’ve never had a fault in space. We’ve never delivered a product that has broken in space. And that can’t happen, that we start sending things up there that break.” - Interviewee 6

A further aspect related to technological complexity that became apparent through the interviews is that RUAG Space’s products are tailored to fit the specific need they are manufactured for. This means that a product that has been developed, manufactured and delivered to one customer might not be the right product for another customer. This makes serial production unfeasible, demonstrated by the following interview statement:

“There is no serial production, but the products are developed specifically for each mission. You don’t just take an old concept and send it off, it has to fit every time.” - Interviewee 4

Besides the technological complexity of the products, another type of complexity came to light through the interviews. This type of complexity could be called a ‘system complexity’ referring to the overall system that RUAG Space’s products form a part of. As the space industry has evolved, certain standards regarding product specifications have emerged and remained. Technology that has been certified has become the template for future technology, even though it might not be the ‘best’ technology available on the market today:

“There exists better technology today, but nobody has taken the step of certifying it. You could use newer types of technology but then you would have to break it down into the ecosystem in which we operate. Often you could do something much better if you start from scratch, but you cannot do that because of the backlog. Everybody has agreed on specific sizes, weights etc. Within that balance it becomes a challenge to innovate. By this I mean that dependencies create complexities.” - Interviewee 5

This ecosystem complexity sets the boundaries for what can be done in terms of product changes. It emphasizes the importance of compatibility between the products, systems and components and highlights that the characteristics of the technology developed today are dependent on how the technology has been developed in the past. Even if small product changes are carried out this could lead to large changes in the overall system to ensure compatibility, which could also result in substantial costs:

“You have an evolution until it is basically not feasible anymore, when any small step becomes very expensive because of all the backlog.” - Interviewee 5

In other words, product and system compatibility creates dependencies that make the products complex. If dependencies do not exist to the same extent, better or cheaper products could be developed:

“Compatibility has a huge impact. It all has to do with dependencies. Things are complex in the context of where you are. I think that Elon Musk is capable of building his rockets cheaper than others because of a lower amount of dependencies.” - Interviewee 5

RUAG Space’s products thus exhibits two types of complexity; technological complexity and ecosystem complexity.

Contrasting companies

While complexity of the products was not addressed in the interview at AstraZeneca, it was discussed during the interviews with GKN Aerospace and Saab.

GKN Aerospace who operate in the aerospace industry also have products that exhibit technological complexity. During an interview it emerged that the products are subject to strict requirements both safety and sturdiness. The products face similar physical strains as the products of RUAG Space, which calls for robustness and a high technological sophistication of the products to cope with the requirements:

“On the one hand you have very strict safety requirements which results in high quality and performance demands, on the other hand our products are subjected to great physical strain. It requires material and technology that can cope with the strain.” - Interviewee 11

It also became apparent during the interview at GKN Aerospace that another aspect making the products complex is regulations or opinions outside of the company that the products are subjected to. For example, GKN Aerospace produces aircraft engines which are constantly subject to debates about fuel consumption and the resulting emissions. This puts a pressure on GKN Aerospace to improve or change their products:

“[...] there’s a pressure from the outside world to reduce fuel consumption and decrease emissions. So, there are a number of forces that make you constantly improve your products in a global market with very tough competition.” - Interviewee 11

In the case of Saab, the need of a sophisticated level of systems engineering and integration became apparent through the interviews. One of their offerings is called GlobalEye, which is an airborne early warning and control solution used for threat detection in a proactive manner. It is essentially an advanced radar system combined with an aircraft, and constitutes one of the costliest investments made by governments, as illustrated by the following interview statement:

“You take a ‘normal’ airplane and rebuild it by attaching a radar system and a bunch of sensors, enabling it to be used for surveillance. [...] It’s the most expensive capability of an air force, far more expensive than Gripen [a multirole fighter aircraft developed by Saab]. These are big, complex political deals.” - Interviewee 12

5.1.3 Stakeholders

In the theoretical framework the importance of the stakeholder groups government, the public and potential employees for firms offering complex products in a dynamic environment was emphasized in regard to strategic positioning. Findings regarding these stakeholder groups, how they impact and are impacted by RUAG Space will be presented below. Subsequently, the same will be done for the contrasting companies.

RUAG Space

From the interviews it became apparent that in Sweden RUAG Space’s three important stakeholder groups are the government, the public and potential employees. The reason why

customers is not included as an important stakeholder group nationally in Sweden is because all of RUAG Space's customers are situated outside of Sweden:

"[...] nationally our external stakeholders are the public, political decision makers and future employees, those are the critical groups." - Interviewee 7

Government

The government is important for RUAG Space in different ways. One way is the role of the government in RUAG Space's business towards ESA. ESA operates according to the principle of "fair return", meaning that the proportion of contracts under a particular program awarded to firms from a given country is in proportion to the funding that country has contributed to the program. Fundamentally this means that the more you commit the more you should receive, where the committing entity is the government of a particular member state and the receiving entities are the firms operating in that state. In extension this means that the success of RUAG Space business towards the public sector is determined largely by the investments made by governments in ESA programs, provided RUAG Space meets other criteria of being a trustworthy supplier:

"RUAG Space competes for contracts from ESA, to get those contracts RUAG Space needs to ensure efficiency and delivery. But it's not an entirely open market, it also depends on how much the country has invested in the programs. If Sweden isn't contributing to the development within ESA, RUAG Space AB can't compete for the contracts." - Interviewee 1

Another important function that the government has for RUAG Space is funding. In Sweden, the administering body of the state's financial commitments to both national and international space activities is called the Swedish National Space Board (SNSB). In an interview with the Head of Communication at SNSB, it could be learned that SNSB is a highly autonomous governmental agency while they also have running interactions with the ultimately responsible government. The agency's primary function is to provide funding related to research and development in the space industry:

"SNSB is an expert authority under the Ministry of Education and its primary tasks is to finance research and technological development" - Interviewee 13

The Swedish space industry firms compete for the financial support by SNSB who works to promote the national interest of science and technology. From RUAG Space's perspective the challenge lies in being perceived as important in the eyes of governmental agencies. If the research and development that is conducted is perceived as important, funding from the government can be achieved:

"To be crass, in the political world it should be hard to prioritize away an area because it's a strive and struggle for money. If you manage to position yourself in a way that makes it hard for politicians to not prioritize you, you will manage to get funds" - Interviewee 6

From the perspective of SNSB, the challenge lies in discerning to what ends the financial means should be allocated. In competing for funds, several firms approach SNSB with possible options for how they can use the financial support, as illustrated by the following statement during an interview with the Head of Communication at SNSB:

“There is a handful of Swedish space companies who are all very competent. [...] the companies themselves approach us with suggestions of new developments for which they seek financial support.” - Interviewee 13

From the findings it has become apparent that government plays an important role in two aspects; investments in ESA program due to the fair return policy, and financial support for technological developments.

The public

The public is important because it is within this stakeholder group that the general perception of the firm is formed. The public has an impact on both the government and on potential employees. They can affect politics through opinion and influence potential employees through the general perception. This intermediate role is illustrated by the following interview statement:

“Society and the license to operate very much connects to the politics because if you have a positive perception in society in a certain country, then you have politics investing in space. Additionally, you have the employer market. You want to have people who desire to work for you, talented people that are attracted to your company, and that is also affected by the perception in society.” - Interviewee 8

The impact that the public has on political decision makers is further illustrated by the following interview statement:

“It’s important to create a political understanding in the country which has regional support of that space is important. [...] Consequently public knowledge becomes important. That people know what RUAG Space does, that we exist and that it is of societal benefit.” - Interviewee 6

The public can be considered at different scopes; locally or nationally. Considered from a local perspective, public knowledge and perception of the company facilitates local collaborations and initiatives. Considered from a national perspective, the role of the public is more about impacting policy decisions and the decisions of politicians. The local and national perspectives on the public is illustrated by the following interview statement:

“The more known we are here [locally] the better collaborations can be built which benefits us all. [...] there is also the public nationally, through which politicians and decision makers can be impacted. We want the space budget to be as high as possible.” - Interviewee 7

Thus, the public impacts the stakeholder groups government and potential employees and can be considered on both a national scale as well as locally.

Potential employees

Potential employees represent an important stakeholder group for RUAG Space, especially in the context of the changing space industry. Having the right competence is crucial to meet the new demands of new customers. The changing conditions mean that RUAG Space might have to acquire new types of competence. The challenge of possessing and acquiring the right competence to face the changes in the industry is illustrated by the following interview statements:

“Now, new actors are entering. They don’t work the way we have been. [...] For RUAG [Space] it’s about getting on the train and switch competences and products for the next generation.” - Interviewee 2

“[...] when we have new customers they pose different demands on what competences we can provide and which products we can deliver.” - Interviewee 9

“[...] I would also like to stress the importance of employer branding, because without new employees things won’t go very well. Especially if we get a lot of new projects through our customers, which is our intention.” - Interviewee 7

Simultaneously, retaining current competence is important to satisfy the demands of Old Space. This creates a situation in which RUAG Space needs to focus on both acquiring new competence without giving up the competence that they currently possess:

“We hire people who we believe will be important for us in the future with a certain profile, but we also feel secure in our current position.” - Interviewee 9

Contrasting companies

Government is an important stakeholder group for AstraZeneca in regards to policy decisions. The policies that are set will impact both AstraZeneca and the industry as a whole:

“There are certain areas which we find important from a policy perspective to ensure that we can survive and remain innovative as an industry. [...] The research bill is an example of such a policy. Hopefully it impacted both us and the industry positively.” - Interviewee 10

In the past, AstraZeneca in Gothenburg did not focus on local awareness and the public in the region. The lack of local activities abruptly changed however, when AstraZeneca faced a potential purchase by an American pharmaceutical company. Then, AstraZeneca in Gothenburg joined forces with both the public as well as politicians and academia, as illustrated by the following interview statement:

“When the possibility of acquisition appeared it suddenly became clear that there was a threat of AstraZeneca disappearing from Sweden if they were purchased by an American giant. Then we had an incredible amount of contact with politicians, academia and the region to mobilize. After that, the perception of why we are important in Sweden has changed.” - Interviewee 10

At AstraZeneca, potential employees is an important stakeholder group. At their site in Gothenburg, they aim not only to attract the best in the world but also to sustain the competence and continuously develop it:

“A lot of the work we do that is research related is that we have to create a ‘hotbed’ to sustain our competence. If we don’t manage that AstraZeneca can’t remain in Gothenburg as one of three strategic centers.” - Interviewee 10

In other words, they need to create a foundation and an atmosphere to which potential employees are attracted, sustained and developed.

At GKN Aerospace, the importance of government became apparent through the interviews. It emerged that while the government is important, the challenge lies in determining what part of the government is most important at different times. For example, there are politicians on all levels - municipality, region, parliament and government, and also nonpolitical officials at each level. As processes regarding policy decisions progress, different actors within the stakeholder group government become important. This is illustrated by the following interview statement:

“The last government decided to investigate the need of a national space strategy, and a nonpolitical investigator was assigned to work on it. Suddenly he became a very important stakeholder for us. When the investigation concluded, the officials who were going through the investigation suddenly became the most important stakeholders. After that the government, who were supposed to make the go/no go-decisions regarding the space strategy and invest in it, became the most important stakeholder.”
- Interviewee 11

It should be noted that the investigation into a national space strategy in Sweden was something that also concerned RUAG Space, and thus the political process regarding that strategy was very much relevant to RUAG Space as well.

In the interview with GKN Aerospace, the stakeholder group the public was discussed only in connection to government and potential employees and how those stakeholder groups are impacted by public perception. For example, the public’s perception of air travel as negatively impacting the environment can affect the decisions of politicians. It then becomes important to highlight the positive aspects of technological development as reducing the negative impact on environment:

“New aircraft has much less emissions than old aircraft, and that’s a positive development that we can talk about.” - Interviewee 11

Potential employees constitute an important stakeholder group for GKN Aerospace. Because of the company’s size which makes them a big employer, they also garner a lot of attention from the municipality where they are situated. GKN Aerospace actively works to absorb knowledge originating from outside the firm boundaries, through collaborations with academia and research funding, illustrated by the following interview statement:

“[...] we have a lot of interest from the municipality since we are a major employer. We also have stakeholders within academia, GKN is a very big financier of research. Today we finance approximately 60 doctoral students who work in technological areas that relate to us. [...] We contribute with financial support and they contribute with knowledge and development.” - Interviewee 11

Government decision makers is an essential stakeholder for Saab as the firm operates in a business to government environment. Thus, governments are customers to the company and the military are the users. Saab is dependent on the government for support in export matters, either in terms of regulations or in terms of funding. In the latter, Saab in combination with Sweden as a country is selling the products. Military, as the user of the products, are also important stakeholders as military can share the user experience to other military nations.

However, government is also important on a local level as it creates conditions for Saab to operate.

“When working between countries, a dialogue between the military is preferred. If Sweden has experience of a certain product is the other country very interested in hearing about their [Sweden’s] experiences.” - Interviewee 12

The close relationship between government decision makers and the public applies in the case of Saab as well. The role of the government as a customer and the impact of the public through public elections make the public an indirect customer to Saab.

“Since we sell products to a country, we must reach government decision makers but also shape the public opinion in favor of our products in the country. - Interviewee 12

Finally, Saab’s products make potential employees a very important stakeholder group. An interviewee describes that through potential employees, Saab can build up the competences needed to develop and produce the firm’s products.

5.2 Stakeholder communication

In the theoretical framework stakeholder communication is argued to be a tool for CoPs firms in dynamic industries for strategic positioning. Thus, the findings presented in this chapter will be related to managing stakeholders through communications and factors influencing that process.

5.2.1 Communication organization and structure

RUAG Space

The communications organization at RUAG Space consists of five people including a VP of Communications at the headquarters in Switzerland, with four country managers in Austria, Sweden, Switzerland and the U.S. Several of the country managers have dual responsibility, for the country in which they operate and for one of the three product groups; Electronics, Spacecraft or Launchers. Several interviewees from the communications team describes how the diverse content responsibilities forces the team to work close and continuously keep each other updated. The VP of communication act as the main coordinator of the communication and is constantly interacting with the managers.

An interviewee describes that before the organizational restructuring the communication was almost exclusively country specific with very little global coordination resulting in various perceptions of the firm. In the new more coordinated communications organization with partly centralized (product groups) and partly local (country specific) communication, RUAG Space aim to delivering a consolidated perception of the company while adapt to local conditions. An interviewee describes:

“Historically, the perceptions that had been built up of the company differed from country to country mainly due to the isolation of each country. Today we try to build a perception that is not completely diametral. [...] We cannot continue to work the way we did two years ago when the countries worked separated from each other.” - Interviewee 8

With the reorganization, the communication regarding one of the product groups is coordinated across the locations involved with that product group, transcending countries.

At RUAG Space, the communication is channeled in both physical and digital form. The new structure has enabled increased coordination between the different channels. The coordination is based on a recently introduced concept called the Newsroom approach where the goal is for the channels connected and support each other. However, several interviewees emphasize that this approach is mainly used for the digital channels and not coordinated well with the physical channels. RUAG Space also distinguish between direct and indirect communication with stakeholder groups. An interviewee describes that RUAG Space emphasize news controlled and shared by the firm itself rather than news told by others. This quote illustrates the focus on direct communication:

“On our website we have full control of the content and if people go there and get information first hand from us it is great. We try to get them there.” - Interviewee 8

New channels, tools and stakeholders makes the work of strategic communication limitless. The communication department is therefore forced to allocate their resources efficiently. An interviewee described that the extended role of communication at RUAG Space has brought discussions about strategy for communication to the top management level of RUAG Space. However, the focus of communication in that context seems to be mainly internal in the communications department. An interviewee stresses the issue of overall firm responsibility and contribution to the communication, illustrated in the quote:

“The information must be sourced before it can be communicated and this is a big challenge we are having at the moment, sourcing information out of the organization.” - Interviewee 8

At RUAG Space, most strategic communication decisions are based on experience. For non-digital communication activities, there are no measures taken about the effectiveness and the outcome of these. As an example, a model of a rocket was put up on display in the Gothenburg office area with the purpose of increase the local awareness of the firm. However, if the brand awareness increased remains unknown as no data about local awareness was collected before the rocket was installed. An interviewee stresses that awareness about the importance of measure and collect data in communication is increasing but knowledge about how to do it is missing.

“I feel like measuring activities must fulfill a purpose. Why are we doing it? At the same time, I would like to have the information measurable but I think it’s very hard to find relevant and strong metrics” - Interviewee 8

The increased amount of digital communication enables RUAG Space to more easily collect and analyze data as many of the tools and channels have inbuilt functions for data collection and analysis. Several interviewees stress the overall impact of the digitalization on strategic communication forcing firms to adopt their communication towards stakeholders in a new manner. For RUAG Space, the digital communication journey only started recently. Building up a digital communication presence is a process and it will take time before RAUG Space catch up. An interviewee describes:

“To be honest, RUAG Space is pretty far behind on the online communication channels. Yes, we have a website, we’re not active on Facebook but the RUAG Space

group is active on Twitter. It was an important step and a goal for us is to frequently deliver content on the new RUAG Space Twitter channel” - Interviewee 3

Out of the three key digital communication channels, Facebook, Twitter and LinkedIn, which the interviewees emphasized, RUAG Space is currently active on two of them; LinkedIn and Twitter. Twitter is the main focus which is aligned with the corporate strategy of increased presence and growth in the US. An interviewee describes how the firm would like to increase their presence on several more channels, but each channel requires additional resources.

“It is easy to start communication projects, but all projects require maintenance so it’s push, push and push. The projects need material but that is how it is with everything. The more channels you have, the more you need to fill them with material.” - Interviewee 7

One interviewee argues that digitalization is a top-down approach and the transformation is dependent on the top management. The support in the organization regarding communication, especially on social media varies. While some top managers, for example the president is very positive others are less enthusiastic. However, an interviewee stresses the importance on active participation in social media to be perceived as an active participant in the industry.

“We are not doing Twitter for the sake of being on social media because it’s trendy. We do it because it’s a key marketing tool for us. This is where the industry informs itself and where the dialogue happens” - Interviewee 8

One step towards an increased digitalization at RUAG Space was the hire of a digitalization manager for RUAG Holding. In digitalization, data is key and in order for RUAG Space to improve the digital position and therefore also the communication collection of data is essential. Data enables increased understanding of stakeholders and opportunities for improved communication.

“Everything is based on data. Try to collect data as much as you can and try to analyze it. [...] Then you can start to understand trends. And when you start to understand trends you start to understand what your vision is. [...] The learnings from data regard is huge but it’s not something that happens in a very short timeframe. You need to understand how you can collect data, how to analyze the data, how to separate the data and then how to target it.” - Interviewee 5

Contrasting companies

The communication department at AstraZeneca also distinguish between global and local communication. The global communication is based on the research units and the local communication focuses on areas where the AstraZeneca sites are located. An interviewee describes the importance of showing results locally in order for the site to maintain a strong position at the firm.

“We try to spread the work we do here [in Gothenburg] to the whole company. Our goal is to create one of the world’s best R&D sites and to do that we must show the company what we work with here. It’s a bit of internal competition.” - Interviewee 10

At GKN Aerospace, most communication is on a divisional level and two people work with strategic communication in Sweden. For the communications team in Sweden, a large portion

of the job consists of remaining updated on laws, regulations and politics as well as stakeholder actions related to the space industry. An interviewee describes that the communications team at GNK Aerospace in Sweden not only perform activities in the name of the firm but also through research programs and organizations related to the operating industries.

The communication department at Saab consists of about 80-90 people working across the world. The importance of coordinated and structured communication in a large communications department was emphasized by an interviewee at Saab. One approach developed for coordination of Saab's communication was to identify what conditions all communication must meet for the communication to be successful. An interviewee describes:

“We [Saab] have realized that the success of our is dependent on three certain conditions that must be fulfilled and overlap. Firstly, what we as a company want to talk about. Secondly, what is happening in society. Thirdly, what our stakeholders wants to talk about. When we manage to meet all of these three conditions simultaneously we have succeeded.” - Interviewee 12

Another strategy for increased communication coordination at Saab was the development of a communication platform. The platform was intended to be the foundation of all strategic communication. An interviewee describes that the core of the platform are five key communication areas used for different purposes and target groups which should include all Saab's communication. The five areas each communication activity should focus on are either the product and its capabilities, how the needs of the future should be met including forward and long-term thinking. The focus could also be on Saab's most innovative product or partnering and cooperation with other actors.

The communication at Saab is like RUAG Space's influenced by digitalization. An interviewee stresses the importance of using digital channels and especially social media strategically where coordination of target group, message and channel is a key factor for success. The content on social media should also be planned strategically according to an interviewee. An example is Facebook that Saab uses to target certain stakeholder groups. In order to create a strategy for social media, an interviewee at Saab describes how the communication department have tried several approaches to identify factors enabling good results.

“It is about reaching out to our stakeholders. The whole idea is to go from just sending information to having a dialogue. [...] We have been playing around a bit. All companies and industries are different. On Facebook it is a lot about boosting and sponsored posts. We have experimented with different techniques paying small amounts to see what works.” - Interviewee 12

5.2.2 Strategic communication in a dynamic industry with product complexity ***RUAG Space***

The complexity of the products affects how and where the products can be communicated. Several interviewees at RUAG Space stresses difficulties of explaining the company's products. Firstly, the products are usually a part of a sub-system which entails that the whole system must be understood first in order to be able to understand the sub-system. Secondly, the functionality and looks of the products are not coherent which limits the power of pure

pictures as a communicator. Thirdly, due to the complexity of the products, a deep technical knowledge is often required to understand the products themselves. An interviewee explains:

In our [RUAG Space's] case you first must explain how an entire satellite works and then you can explain the product. They [products] need a very profound knowledge to be understood.” - Interviewee 8

Interviewees explain that to overcome the difficulties of communicating complex products, communication tools are used. Tools mentioned by RUAG Space interviewees are visualization, simplification, personalization and emotionalizing. This quote illustrates the finding of visualization and simplification:

In the product group Electronics, our [RUAG Space's] products look like metal boxes. You cannot easily convey a message through an image of the metal box alone. You have to think outside the box and be graphical to get across that you're talking about electronics.” - Interviewee 8

For the use of tools in the communication of the products and projects at RUAG Space, the firm must be allowed to communicate. The restriction of project communication is founded in the long development cycles and the large number of partners in each project. An interviewee describes that in the previously closed industry, communication of projects was not considered a problem. However, the opening up of the industry and the need for firms to communicate with their stakeholders have made contract negotiation increasingly important. Communication as a part of contract negotiation is illustrated by the quote:

“Communication is an element when negotiating new contracts. When we close a completely new contract we coordinate closely with that partner on the initial communication. - Interviewee 8

As RUAG Space's products in themselves are difficult to communicate and the ability to communicate for RUAG Space about new and upcoming projects can be limited, the focus of the communication must be shifted. An example highlighted by an interviewee is to talk about currently active projects including RUAG Space products and how these projects deliver value towards stakeholder groups.

Contrasting companies

Another firm sharing similar communication difficulties as RUAG Space is AstraZeneca, operating in the pharmaceutical industry. An interviewee from AstraZeneca explains that due to regulations and extremely long product development processes, the firm is not allowed to market their products directly to the consumers. Instead, the company directs the focus of the communication elsewhere such as the firm's innovation skills, research or communicates previously successful products and the effect of these products, illustrated in the following quote:

“We can communicate that we are an innovative company focused on research and with certain types of competences. We do not communicate much about what we do but instead we do things that we later can communicate about.” - Interviewee 10

The nature of the products and the industry also impact GKN Aerospace's communication. An interviewee describes that the firm must evaluate each communication activity strictly to

prevent distribution of sensitive information. The evaluation impacts the communication speed.

“Since we are operating both commercially and in the defense industry, everything must be controlled and approved. We don’t communicate everything fast and continuously as all information must be cleared internally first.” - Interviewee 11

Another firm coping with product complexity in communication is Saab. According to the previously described communication platform laying the basis for the firm communication is Saab also often redirecting the communication away from the products themselves. Instead the communication highlights advanced technology, sustainability, innovation or cooperation’s with other actors.

5.2.3 Communicating with stakeholder groups

In the theoretical framework, three stakeholder groups were identified as increasingly important for CoPS firms operating in dynamic industries. The three stakeholder groups are government decision makers, the public and potential employees. The empirical findings relating to communication towards the three stakeholder groups are presented below.

5.2.3.1 Government Decision Makers

RUAG Space

Government decision maker is a highly important stakeholder for RUAG Space. The purpose of communicating with this group is both to try to create an understanding in the group about important issues in the space industry and to understand factors the group considers important. Thus, RUAG Space can adapt their communication and increase the relevance towards the target group.

RUAG Space has one employee managing public affairs and responsible for remaining updated on space issues discussed on a high political level. RUAG Space has continuous contact with politicians and follow the relevant debates. In addition to the public affairs responsible, RUAG Space spread information about the firm and the industry through a newsletter. The newsletter consists of a compilation of essential information relating to the business. The firm also participates in the largest national politics week where they interact with both politicians and the public. On a local level, RUAG Space is cooperating with other local industry actors sharing the same political interests to highlight the space industry in west Sweden with the purpose of informing and discussing with local political forces.

Communication activities targeting political decision makers varies depending on the state of the four years political cycle. Each election results in a turnover of politicians working with space related issues and in the beginning of a cycle RUAG Space’s communication must be focused on informing.

“In the beginning they [politicians] don’t know very much at all and it’s rare that they have any kind of space background.” - Interviewee 1

In the communication with government decision makers, RUAG Space focus on both ESA contracts and funding of their own research. However, an interviewee believes that the communication should be more focused nationally towards investments enabling business opportunities further down the value chain, down-streaming. Thus, the communication is increasingly related to the objectives and personal interest of the target group.

“We must talk about how it is beneficial for the Swedish politicians to allocate more financial resources to the space industry.” - Interviewee 6

Decisions on a high political level impact firms’ business and the election cycles combined with the people turnover can quickly change the focus of the political space discussions. Several interviewees expressed a demand for decisions following a more long-term strategy.

“A national space strategy is something that the Swedish space industry would consider a positive thing to have so that the firms could have something to relate to long term. Considering technological innovation and different commitments by the state it would be positive to know long term what the government is planning regarding those questions.” - Interviewee 1

Contrasting companies

In general, all firms in the study strongly stress the importance for their business to have relationships with government decision makers and politicians, both on a national and local level. An interviewee from AstraZeneca talks about interactions with politicians both for subjects relating to the development of the industry but also in terms of other aspects, like being able to sufficiently accommodate employees that are recruited from abroad:

“For example, as a global company we have expatriates and the company therefore sees its responsibility to impact political decisions relating to the care of this group. It could be about taxes or local availability of international school for the expatriates’ children. That is essential for us to attract competence.” - Interviewee 10

Swedish firms in the space industry are facing similar challenges in the communication with government decision makers. An interviewee from GKN Aerospace describes that a large portion of the communication with the stakeholder group revolves around informing and educating. The interviewee also express concerns about the lack of a long-term strategy, mainly due to the fast-changing focus of the political discussions.

“If there are negative opinions about airplanes and flying, the political actors in Sweden might make decisions to stop financing airplane research. Or it could be the opposite, with political decisions supporting even larger investments in the field because it opens up for reduced emissions.” - Interviewee 11

At Saab, the importance of communicating with the stakeholder group government decision makers is argued both from a national and a local level. On a local level, Saab interacts with the stakeholder group by inviting politicians to the firm as well as participating in local industry organizations. As Saab operates in the business to government sector, implying that the firm sells products to governments, the communication towards the government on a national level is different compared to the other firms. Saab is dependent on national funding from governments and national militaries. National militaries are users of Saab’s products and can therefore share experiences with potential customers. On a local level, the communication is focused on safety and public good. However, on a national and customer level, Saab communicates the product capabilities and how to meet future needs.

5.2.3.2 The Public

RUAG Space

Several interviewees at RUAG Space emphasize that awareness of a company is the foundation of communicating with all stakeholder groups. General awareness of a company which seems to be equivalent to be known by the public, is argued to be an initial focus before targeting specific stakeholder groups. However, the awareness of RUAG Space locally is still low. The acquisition of Saab Space by RUAG Holding in 2008 and the change of the name to RUAG Space AB has not yet achieved widespread impact in Gothenburg, illustrated in this quote:

“I don’t think we are that well-known today. I believe that Saab Space that no longer exists is more well-known than RUAG Space that exists.” - Interviewee 6

Local awareness is explained by an interviewee to be important as it enables the firm to cooperate with other organizations and entities in the area. RUAG Space’s approach to create awareness locally is a combination of media relations and participation in local events. An interviewee describes that media relations include interviews and press releases. Active participation in media and close long-term relations with journalists is important to get attention and therefore indirectly communicate with the public. Participation in local events, such as fairs, exhibitions and own initiatives, gives RUAG Space the opportunity to communicate directly to with their stakeholders.

The complex nature of RUAG Space’s products forces the focus of the communication away from the products themselves. Instead, RUAG Space points out the public good of the products. This is illustrated in the quote:

“When we communicate to the public we want to talk about the long-term impact our products have on the people and the society. We really want to convey the benefits of satellites and highlight our contributions to the satellites enabling these fantastic space programs that give the public great value.” - Interviewee 7

Contrasting companies and additional interviews

At AstraZeneca, product communication towards the public is strictly forbidden due to industry laws and regulations. Instead the firm must redirect the communication towards areas such as capabilities, research and innovation. For example, AstraZeneca Gothenburg recently created a visiting tour on the site communicating firm operations in a manner that is understandable and relatable for the public. Another strategy to increase the awareness among the public is to work on a local industry level. An interviewee describes that AstraZeneca work to strengthen the position of life science in Gothenburg and Scandinavia and therefore indirectly improve the knowledge of the firm among the public.

Communication towards the general public at Saab mainly focuses on the firm’s contribution to public good through for example safety. However, the communication with the public varies between countries depending on the country’s internal and external security environment. While the benefits of the society is generally emphasized, the focus can also be turned towards the firm's products. As the public is strongly related to the government, Saab can also communicate the product capabilities to the public of a country whose government is a potential customer.

An interviewee at GKN Aerospace expressed concerns about the difficulties to for a high technology company in the business-to-business to create awareness and interest among the public as the operating areas of planes and space are quite narrow. The width of the operating areas impacts the attention of the media since according to a journalist, the content reported by the company must be aligned with the needs and interests of the readers. This is illustrated by the quote:

“Our [journalists] job is to report many different topics covering the whole society. When you talk about news, you usually talk about closeness, time perspective etc. You could draw a diagram including time and distance as well as cultural distance and where the curves intersect there is a good news story.” - Interviewee 14

5.2.3.3 Potential Employees

RUAG Space

The HR department at RUAG Space is like the rest of the organization structured in a matrix organization with managers responsible for the product groups and managers responsible for the countries. Thus, the HR organization is centrally governed through core processes, local variations exists in order to adjust to local needs. An interviewee explains:

“There are always things that must be locally adjusted and different. You cannot run HR only through a global strategy since there are always local and national subjects that must be adjusted country by country.” - Interviewee 9

The local adaption of HR entails the recruitment of potential employees to be a cooperation between the local communication and HR teams. During the last 20 years, RUAG Space in Gothenburg have had a very low employee turnover. The need for hiring new employees has been limited and the result of that is that the average age in the office is high. An interviewee describes that a recent study showed that 20% of the staff in the Gothenburg office at RUAG Space will retire in five years. The changing product demands in the space industry, influences the competences RUAG Space needs to satisfy the new customer needs. Therefore, the replacement of the employees in Gothenburg must be strategic. An interviewee describes:

“We must look at what competences we have now in relation to what competences we need in the future. [...] We might now need different competences and therefore can't just replace the current positions automatically. [...] Tomorrow's needs for succeeding with our products are closely related to matters of competence and recruiting”- Interviewee 9

Several employees agree that the industry hype is reflected in the increased interest among potential employees groups such as students. Students is a key group and RUAG Space have worked closely with the technical universities Gothenburg and Linköping for years. The collaborations with the universities has a positive impact on both technical development due to the possibility to access university knowledge but also on branding towards potential employees. The collaborations combined with university activities and events have showed branding results as RUAG Space lately have showed improved results in brand awareness at the universities.

Contrasting companies

At AstraZeneca, potential employees is also considered a key stakeholder group. An interviewee explains that the firms use several different approaches to target and influence the stakeholder group. LinkedIn is used as a main source to attract competence, both nationally and globally, to the Gothenburg office. Attracting talent is essential for AstraZeneca in Gothenburg in order to maintain one of the firm's three strategic centers in the world. One strategy for this is to be involved in university and education in order to ensure that supply and demand of competencies are coherent. Another strategy is to impact politicians in order to create an attracting environment for expatriates in Gothenburg. Taxes for expatriates and international schools are examples of issues AstraZeneca focus on. Attracting people with a high level of competence lays the foundation for the innovation and development at AstraZeneca.

Towards potential employees, GKN Aerospace communicates aspects of the firm as an employer. An interviewee describes that the firm's position in equality and community engagement are examples of subjects emphasized in the communication. Facebook is a channel used for communication with potential employees. At Facebook, GKN tries to attach messages with current events. An example described by an interviewee was the national woman's day where the firm communicated the change in female roles at the company over time from the perspective of female employees.

Saab also uses Facebook as a channel to reach potential and current employees. Communication with potential employees is described by interviewee to be important in order for the firm to recruit the right competencies for the development and production of the products. In addition to Facebook, Saab also works with recruitment through participation in university fairs and by sponsoring equestrian where the target groups are female and youths.

5.2.4 Factors influencing strategic communication

In the theoretical framework, three factors influencing strategic communication were identified; legitimacy, brand and reputation. Thus, the empirical findings relating to the three factors are presented below.

5.2.4.1 Legitimacy

RUAG Space

Several interviewees from RUAG Space agree that legitimacy and therefore acceptance in politics and by the public is essential for the firm's business. An interviewee describes that firms operating in the space industry could potentially be questioned by stakeholder groups for several reasons. Firstly, the criticism could be related to the fact that RUAG Space is dependent on the government and therefore also the public for research funding and ESA contribution, especially with an increasing share of the business from New Space and private investors. An interviewee describes:

There are people questioning if money should be allocated to the space industry. Is it relevant with space tourism or researching evolution? Another factor is the increasing number of private investors in the industry and how that impacts government research funding." - Interviewee 7

Secondly, the legitimacy of RUAG Space can be questioned because of the new product demands in the space industry and the fact that RUAG Space is forced to adapt. An interviewee states that the foundation of RUAG Space's strong legitimacy is the, until now constant success of the products in space. The decreased testing of the new products based on

the lowered quality expectations from new customers could change the success rate and therefore also the perceived legitimacy.

Contrasting companies

Similar to the space industry, the contrasting companies are also operating in industries that potentially could be questioned by stakeholders for various reasons. At AstraZeneca, an interviewee emphasizes the importance for the firm to be perceived legitimate and how this impact the communication.

“Legitimacy is extremely important for us. It is the foundation of our business. That is why we are so serious about our communication. We do not take risks when it comes to communication. We want to push the limits of research but we try to not be the ones who push limits in communication.” - Interviewee 10

Legitimacy is also essential in the defense industry where Saab operates. An interviewee describes that to maintain a legitimate perception, Saab focus on communicating the public good of the products, the overall value of the products and the ability they have to improve society. Saab have discovered that the acceptance of their business varies with the current state of national security.

“We noticed differences over a period of time. There was a period when surveillance was a sensitive topic but then foreign military activities that could be perceived as threatening to Sweden started to occur. Since then we have noticed an increased understanding for the topic in Sweden and it’s easier to have a dialogue about it.” - Interviewee 12

An interviewer from GKN Aerospace stresses sustainability as a founding factor in the perception of legitimacy. For firms operating in environmental critical industries, the focus on the communication must also be about the sustainability improvements and the public good.

“We must show the public good of our products. The airline industry is very criticized because of pollution issues. Our biggest products are airplane motors but we are working with technology that lowers the emissions and increase the performance. That is how we must communicate to strengthen our legitimacy.” - Interviewee 11

5.2.4.2 Brand

RUAG Space

The organizational restructuring has impacted the opportunities for RUAG Space to strengthen the brand. Instead of the previously uncoordinated and inconsistent communication, RUAG Space can now communicate as one united brand. Several interviewees emphasized that the restructuring of the department was essential in order to compete in the new conditions.

“Our customers expect that if they talk to RUAG Space and want to hear one consistent voice from the company. [...] It is essential in order for them to see us as a strategic partner.” - Interviewee 9

The only active division of RUAG Holding in Sweden is the Space division. Several of the interviewees talked about the positive associations with the space and how it can be used as an advantage in communication.

“It is very important that we are communicating Space as it is a competitive advantage for us. When we work with branding in general it is important both because the company name is RUAG Space and because we want to show space, since space is associated with something positive.” - Interviewee 7

However, in Gothenburg RUAG Space is communicating with the RUAG logo and not with RUAG Space creating a branding conflict of interest. An interviewee describes:

“It is a competitive advantage for us to talk about Space. It cannot be seen in the logo, there it is only “Together Ahead” but it is RUAG Space we want to communicate, it is important.” - Interviewee 7

One initiative to increase the brand awareness locally was to install two large space rockets placed next to the RUAG Space Sweden offices in Gothenburg and Linköping. The rockets are placed strategically for people to see when passing by. The results in brand recognition locally from the rockets have not been established but several interviews can imagine a positive result of the brand awareness locally.

Contrasting companies

A firm that has been improving their local brand tremendously is AstraZeneca. The firms were previously overlooked as a big player in the Gothenburg area due to limited local activities but an acquisition threat forcing the firm to increase local engagement with politicians, academia and the region changed the perception locally. At this time, AstraZeneca realized the importance of actively communicating both locally and globally.

“You [AstraZeneca] realize that you can be a global player but it is extremely important to be a local player as well which we were not before. Then you pay the price. If you’re not there, then nobody sees you as an important player.” - Interviewee 10

AstraZeneca has also started local initiatives to create a stronger brand awareness outside of their product range. An interviewee describes that a hub for start-ups have been established inside the walls of the firm to establish a stronger association between the brand and innovation. Another initiative is the initiation of an industry cluster in the area where the firm is located. This is according to the interviewee a strategy to locally show the strong industry position and strengthen Gothenburg as a large industry component.

An interviewee at GKN Aerospace describes social media as a tool to strengthen the company brand among stakeholder groups. Through social media, the firm can communicate activities, products and capabilities relevant to the target groups in each social media channel. Local engagements, such as collaborations with universities, involvement in industry organizations and contributions to research funding, are activities strengthening the brand among various stakeholder groups.

Saab also searching for opportunities to strengthen the brand. Saab has a separate division in the communications team responsible for the company brand. An interviewee described that the brand division is responsible for activities with the CEO of the company, global fairs and other activities with the purpose of building the company brand.

5.2.4.3 Reputation

RUAG Space

The establishment of a reputation to deliver robust and high-quality products is founded in the great success rate of RUAG Space's products.

"We have a really good reputation. We have never been wrong in space. We have never delivered a product that have broken down up in space." - Interviewee 6

However, several interviewees express concerns about how the new product demands in the industry will impact RUAG Space's reputation, especially the lowered price and quality.

"With New Space the suppliers openly state that you should order more satellites because you should not count on all of the satellites. Standardized products are cheaper because the level of quality is much lower. The products are not tested as thoroughly, and this entails larger risks." - Interviewee 7

Contrasting companies

At AstraZeneca, the reputation of the firm as a product developer and employer is essential. Rather than a firm searching for the spotlight through its actions, AstraZeneca prefers to be perceived as conservative. With the conservative approach, AstraZeneca does not risk damaging the reputation that firm have built up over a long period of time.

"As of tradition, we have always been quite conservative. There are other firms more eager to create headlines in the industry." - Interviewee 10

The topic of reputation was not discussed in the interview with GKN Aerospace but it is something that Saab emphasized. Saab considers improved reputation as one of the main objectives of the communication activities. Thus, a main focus is thoroughly considered communication in line with the firm's vision and strategy. An interviewee stated that Saab aim to be perceived as a company that is concerned and responsive to stakeholder interest and objectives.

6 Analysis

In the following chapter the analysis of the study will be presented. The analysis is based on the empirical findings in relation to the theoretical framework developed in the study. The analysis starts with the impact of dynamic industry, product complexity and stakeholders on strategic positioning. Further, analysis focusing on strategic communication for CoPS firms in dynamic industries will be presented.

6.1 Dynamic industry, product complexity and stakeholder classification

The contextual environment of RUAG Space examined in this study is based on the theoretical areas dynamic industry, CoPS and stakeholder theory. Thus, the analysis of the empirical findings related to these three areas of theory, and their impact on strategic positioning, will be presented below.

6.1.1 Strategic positioning in a dynamic industry

The structure of the space industry is currently in a flux. New Space means new actors in the industry and new demands on the products, as illustrated in section 5.1.1. The catalyst of the changing conditions in the industry lies outside the firm boundaries of RUAG Space and is not initiated by the company themselves. RUAG Space actions to cope with the changing conditions are thus reactive. This approach equates to the second strategic action proposed by Porter (2008), who states that when an industry changes structurally new strategic positions to serve new needs in new ways may appear. This is as opposed to the first approach by Porter (2008) where the company positions itself within a given industry structure, and the third approach where the company shapes the industry structure. One action by RUAG Space within the frame of the second strategic approach is the strive towards more commercialized products.

While the changing conditions suggest that RUAG Space needs to adjust its strategic approach to suit the external environment, as illustrated in section 5.1.1, RUAG Space simultaneously need to preserve those aspects that suit the public sector. It comes down to balancing between the demands stemming from New Space and Old Space respectively, which is highlighted by an interview statement in section 5.1.1, stating the challenges of driving two completely different ways of doing things. Giving up the old ways is not an option, while failing to adjust to New Space would be equally negative. Looking to the first part of that statement, the focus on government as a stakeholder becomes crucial. Looking to the second part of that statement, the stakeholder groups potential employees and the public becomes crucial.

6.1.2 How product complexity affects strategic positioning

In this section, the nature of product complexity will first be discussed to facilitate an analysis of how it impacts strategic positioning. The last paragraph discusses the impact of product complexity on strategic positioning.

A lot of the interviewees at RUAG Space decidedly stated that the products are complex. Some stated that even though they lacked the technical background to support it, they considered the products to be complex, as illustrated in section 5.1.2 of the empirical findings. Thus, it seems that the somewhat abstract comment of Hobday & Rush (1999) regarding complex product systems that “you will know one when you see one” is prevalent.

From the empirical findings different aspects of complexity in the products could be identified. Several interviewees emphasized the technological aspects of complexity as illustrated in section 5.1.2, which they meant is a result of the heavy requirements on quality and physical endurance that the products are subjected to. Because of the unique requirements on the products, the technology behind them is forced to a high level of sophistication. This technological aspect of complexity is in line with existing literature (Hobday, 1998; Davies & Brady, 2000) in the sense that complex product systems are characterized as high-technology. Furthermore, the products supplied by RUAG Space eventually become part of even larger complex product systems, i.e. satellites and spacecraft, and can thus be viewed as complex sub-systems of larger complex product systems, resonating with the view of Hobday & Rush (1999) who highlights the hierarchical structure of complex product systems with sub-systems who in turn exhibit complexity.

Another aspect of complexity illustrated in section 5.1.2 are the dependencies within the system where the products are supplied. Compatibility is a part of the force creating dependencies, meaning that RUAG Space is forced to interact with multiple actors interdependently, and adhere to requirements and standards which have been shaped along the historical trajectory of the space industry. This is similar to the views of Brown & Eisenhardt (1997) and Baccarini (1996), who describe complexity as multiple interacting and interdependent entities. From that point of view, it can be argued that complexity arises from the 'ecosystem' in which you operate, and the dependencies within that ecosystem.

The technological complexity and the ecosystem complexity are intertwined. Because of the high technological sophistication required in terms of quality and durability of the products, safety and quality standards have emerged. RUAG Space is forced to adhere to such standards, creating dependencies between them and their stakeholders. This complex nature of the products creates certain conditions for how RUAG Space can or need to operate. Achieving a strong strategic position through product differentiation is limited to incremental changes of the products. The dependencies restrict the prospects of radical changes to the products, instead they encourage product improvements within a predefined frame of requirements. Thus, the restraints on RUAG Space originates from the dependencies between them and their stakeholders, which supports the arguments made by Phillips et al. (2010) who mean that stakeholders inherently act as the restraints put upon the firm. This demonstrates the option of stakeholder management as a strategic initiative for a strong strategic position.

6.1.3 Stakeholder characteristics and classification for strategic positioning

In this section the stakeholders discussed in the empirical findings will be classified according to the framework of Mitchell et al. (1997). The three attributes of the framework; power, legitimacy, and urgency, will be discussed in regards to the stakeholder groups to establish a classification for each of the groups.

6.1.3.1 Government

It can be concluded that the government is considered an important stakeholder to RUAG Space based on the interview statements in section 5.1.3. The government's importance is elevated when considered in the context of the fair return policy which can be found in section 5.1.3. Through that policy, government decisions fundamentally have a direct effect on sales towards the public sector. This clearly demonstrates the power that the government possess. Furthermore, both the claims of the government and the way in which they advance the claims is legitimate, considering that they are elected by the public and their actions are

governed by legislation. With power and legitimacy alone, the government can be considered a dominant stakeholder. As can be seen discerned from the statement by interviewee 11 in section 5.1.3, different ministries or individual actors within the political sphere can acquire urgency at different points in time. In that statement the interviewee described the phenomenon when talking about the investigation regarding a national Swedish space strategy, where different actors received higher attention at different stages of the investigation. It can thus be argued that the urgency attribute is more inherently dynamic for the stakeholder group government. It is also apparent in section 5.2.3.1 that some of the work towards politicians is a continuous process of informing and educating politicians about the space industry, since the politicians change between terms and new politicians might not be knowledgeable in the area. Thus, urgency is an attribute that is fluctuating and constantly reallocated within the political sphere, but as a collective stakeholder group the government does indeed possess the attribute of urgency as well. This makes the government a definitive stakeholder to RUAG Space.

6.1.3.2 The public

The public is a very elusive stakeholder group. Essentially, it is a bundle of perceptions towards the firm which are formed in the external environment. These perceptions are shaped both by the firm itself but also by other forces. The importance of this stakeholder group becomes clearer when considering the effect of the perceptions among the public on other stakeholder groups, like potential employees and government, which is apparent in section 5.1.3 of the empirical findings. In section 5.2.3.2 it can be seen that the predecessor of RUAG Space in Sweden is likely more well-known than RUAG Space, although it does not exist anymore. Thus, the realization of potential benefits of a positive public perception are restricted. In terms of the attributes, the public lacks power. They can however get the attention of stakeholder groups that possess power, like the government, but cannot wield it themselves. Furthermore, the public do not possess urgent claims on RUAG Space, although they have the ability to acquire urgency. The public cannot generally be considered to have urgent claims at a given point in time. This leaves the attribute legitimacy, which is possessed by the public. With the only attribute being legitimacy, the public can be classified as a discretionary stakeholder.

6.1.3.3 Potential employees

The urgency of the stakeholder group potential employees is apparent at the RUAG Space office in Gothenburg. There, every fifth employee will have retired within the next five years as illustrated in section 5.2.3.3 of the empirical findings, creating the urgent need of finding new capable employees. Whether this stakeholder group possesses the attribute power is harder to determine. In section 5.1.3 of the empirical findings the interview statements convey that potential employees are indeed very important, yet the statements only consider what RUAG Space needs to do regarding the stakeholder group and not what the stakeholder group can do regarding RUAG Space. This can be interpreted as if the relationship is one-sided from RUAG Space's point of view. It can thus be argued that potential employees do not possess any direct influence on the firm, since the relationship is latent or one-sided until the point where a potential employee directly has contact with RUAG Space. However, RUAG Space is very much affected by the actions of potential employees, as illustrated in section 5.1.3, whether or not those actions are intended to affect RUAG Space. Their decisions to seek employment at RUAG Space, or more importantly their decisions not to, will largely affect the capacity of RUAG Space to meet the demands of the future. The power that potential employees possess over RUAG Space can thus be argued to be indirect, and not fully be considered an attribute possessed by the group within the framework by Mitchell et al. (1997). Potential employees possess the attribute legitimacy, since the relationship between

the firm and potential employees can very much be considered legitimate. The stakeholder group potential employees possess two of the three attributes; urgency and legitimacy, and can thus be classified as a dependent stakeholder to RUAG Space.

6.2 Stakeholder communication for CoPS firms in dynamic industries

Stakeholder communication as a tool for strategic positioning for CoPS firms in dynamic industries was motivated in the theoretical framework. Thus, analysis related to stakeholder communication presented below.

6.2.1 Strategic communication

The business and products of RUAG Space seems to be both impacting and impacted by various stakeholder groups. This interdependent stakeholder relationship view at RUAG Space is aligned with Cornelissen's (2017) description of the stakeholder management model. In that model, stakeholder relationships are key, and communication lays the foundation for these relationships.

In order to stay competitive, RUAG Space have done major changes in their organization including in the communication department, illustrated in section 5.2.1. Previously, the communication department seems to not have been as efficient and was decentralized. In the old space industry, with few stakeholders and little external communication, the effects of a less efficient communication department seem to have been smaller. However, with new stakeholders entering the industry, new demands appear. The new communication organization at RUAG Space is a consolidation of the previously separated national communication entities. Consolidation of communication disciplines is according to Hallahan (2007), a corporate trend as it enables increased communication efficiency and synergies. The new organizational structure at RUAG Space seems to have had positive impact on both coordination, structure and efficiency.

In the currently highly dynamic space industry, RUAG Space's overall strategy concerns an increased width of the product line and growth in the U.S. Hallahan et al. (2007) argue that strategic communication is communication aligned with the overall company strategy. New communication activities, like the start of the Twitter channel, is an example of that the strategy of the communication department reflects the overall strategy. The understanding of the importance of communication seems to have increased lately at RUAG Space. On a top management level, the CEO emphasizes the importance of being an active communicator which according to the communications team is a big advantage. However, other senior managers seem less educated on the topic which contradicts Cornelissen's (2017) arguments that decision making on a high corporate level require profound knowledge on the topic of communication.

Another initiative supporting the top management's increased understanding of the changing business environment is digitalization. The fact that digitalization will have major impact and change all levels of businesses is supported by Gilan & Hammarberg's (2016) statement that everything that can be digitalized will be digitalized. On a corporate level of RUAG Holding there seems to be an understanding of this power of digitalization. Examples of actions are the hiring of a corporate digitalization manager. However, in order to leverage the knowledge of the new manager, support from the whole top management is essential for processes to be digitalized as digitalization is initiated top-down in organizations.

6.2.2 Factors impacting strategic communication

Three factors impacting strategic communication was in the theoretical framework identified as legitimacy, brand and reputations. Presented below is the factors impact on firms' ability to communicate with their stakeholders.

6.2.2.1 Remaining legitimate in a dynamic industry for CoPS firms

In the area of legitimacy, the perception of the RUAG divisions varies. With a core in military equipment, some divisions of RUAG Holding are operating in potentially ethically questionable industries. Through Palazzo & Scherer's (2006) definition of corporate legitimacy as the perception or acceptance of corporate norms, values and beliefs it can be argued that there is a correlation between industry and firm legitimacy. Based on that definition one can understand that military related industries are frequently subjects for a decreased legitimacy.

For many years, the space industry was a closed industry. The projects were long and secret, external communication was limited, and industry entry barriers were high. In this context, it can be understood that RUAG Space employees perceive the company as an experienced, strong and robust player in the industry. The 100% success rate of RUAG Space products' functionality in space could explain the appreciation of high legitimacy by their stakeholders, see section 5.2.4.1. However, the currently highly dynamic industry with lower barriers of entry result in many new private actors with new demands. The firm characteristics of experience, robustness and strength, laying the foundation of RUAG Space's high legitimacy seems to have lost power in the industry. Instead the new industry actors are demanding lower prices, lower quality and larger quantities. In order to position themselves in the industry, RUAG Space must make changes in its business and these changes might be in line with the demands of new customers but be less accepted by other stakeholder groups. Cornelissen (2017) argues that it is important to be perceived as legitimate by both market and non-market stakeholder groups. Strategic positioning in the new space industry can force lower product quality resulting in reduced robustness in the products. RUAG Space's previously strong legitimacy was based on firm characteristics, such as experience and robustness. If the perception of RUAG Space changes, the legitimacy could decrease for the non-market stakeholder groups. Without the former strong firm characteristics, the perception of RUAG Space's legitimacy could decrease for the non-market stakeholder groups.

The historically high reliability and trustworthiness have enabled RUAG Space to supply space products for various purposes such as the ESA programs and private initiatives. Strategic flexibility is according to Zerfass & Viertmann (2017) ensured through legitimacy. The authors further states that lowered legitimacy, not only decreases firm flexibility but questioned license to operate impacts other dimensions negatively. Mutual impact and the financial business dependencies of non-market stakeholder groups have major impact on the firm's research budget. The legitimacy of the space industry and the focus of space research seems to create the foundation for government support of the space industry. If the focus of research or its relevance is perceived negatively, government funding could decrease.

As noted from the interviews, the political agenda can change quickly so therefore it is important for RUAG Space to steer the conversation in the right direction and constantly prove and communicate the public good of their operations.

6.2.2.2 Branding in a hyped industry

Before the reorganization of the firm and the communication department, RUAG Space seems to have been perceived differently in each operating country. From Argenti & Druckenmiller's (2004) definition of brand as the holistic expectations of firm delivery in terms of products, services and customer service, it can further be argued that local perceptions of the RUAG Space brand existed as well, especially since each country has different operations and cultures. Instead of one global brand, the RUAG Space brand was perceived differently depending on the location.

The establishment of one strong brand seems to be one of the key goals of the communications department after the organizational restructuring, to facilitate RUAG Space's position globally within the space industry. A collective stakeholder perception of one united firm seems to be the objective of the focus on coordination of communication activities in the new communications department. However, in RUAG Space's communication there are inconsistencies in the communication of the brand as it varies between the corporate brand and the division brand. It became apparent from the interviews that part of the communication emphasizes RUAG as the brand, see section 5.2.4.2. Nevertheless, the communication team stresses the importance of always communicating RUAG Space. Reasons for that are, as previously discussed, the varying levels of legitimacy for other RUAG Holding divisions combined with the current hype in the space industry.

6.2.2.3 Maintaining a reputation for CoPS firms in a dynamic industry

From Argenti & Druckenmiller's (2004) definitions of firm image and reputation it can be argued that inconsistency of brand communication can impact the strength of the firm image and reputation, both on a global and local level. The prioritization of current communication activities at RUAG Space emphasizes establishment as a global player. However, the changing industry demands on products is considered a concern for the strong reputation related to the 100% success rate of the product in space, see section 5.2.4.3. In order to maintain the strong reputation, it can be argued that RUAG Space in the communication clearly must separate the products supplied for the new space industry and the products aimed to supply the old industry customers and demands.

6.2.3 The process of communicating

The framework for strategic communication by Argenti et al. (2005) represents the foundation of the communication between firms and their stakeholders. Presented below are empirical findings, mainly related to the three stakeholder groups adapted to the framework by Argenti et al. (2005).

6.2.3.1 Strategy

As previously established, the interdependencies between RUAG Space and its stakeholders make communication essential. The firm seems to be communicating with its stakeholders for different reasons. The differentiation of the information seems to be structured based on information relevance for the stakeholder groups and how the stakeholder groups can gain from the message communicated. Differentiation of information communicated to stakeholders is aligned with Argenti et al.'s (2005) theory that different stakeholders have different objectives and the overall strategy must therefore be divided and communicated to the right audience.

The communication at RUAG Space is structured according to responsibilities. However, it seems like the department lacks clear overall routines for choosing what information should be communicated, and how, illustrated in section 5.2.1. Cornelissen (2017) emphasizes the

importance of the message itself and argues that the purposes of communication activities determine where, how and to whom the information will be communicated. Saab has developed a model for all types of communication similar to the principles proposed by Cornelissen (2017). The development of a model constituting all types of firm communication activities seems to provide a solid structure facilitating and guiding further decisions such as channel and target group.

In the old space industry, RUAG Space seems to have been forced to be very restricted in sharing information. However, the changing demands in the industry forces firms to increase external insights and keep stakeholders updated in current firm activities. These demands correspond to Gilan & Hammarberg's (2016) identification of efficiency, proximity, speed and transparency as key digitalization characteristics. The mindset of a majority of the RUAG Space employees seems to still be in the old space industry, willing to share very limited operational information. It can be argued that this mindset hinders the communication department to fully push RUAG Space into the digital world as material for frequent updates of the digital channels require large efforts to collect.

In addition to sourcing communication material out of the organization, the firms must be allowed to communicate the information, which is not always the case as evident from the interviews. RUAG Space, AstraZeneca and Saab all seem to be very limited due to factors such as supplier, buyer and industry restrictions and confidentiality. RUAG Space's ability to share information regarding collaborations or new contracts seem to be dependent on the stakeholders involved. Lacking the permission to communicate freely means missed communication opportunities for RUAG Space.

6.2.3.2 Messages

RUAG Space uses a variety of channels to communicate with their stakeholders. Argenti et al. (2005) argue that the choice of the channel is a critical link between the company's strategy and the stakeholders' understanding and response to the strategy. Before the reorganization most of the channels used by RUAG Space were in physical form, but most new communication initiatives are through digital channels. The start of the RUAG Space Twitter account seems to be the biggest focus which is also supporting the overall corporate strategy to grow on the U.S. market. However, the focus on Twitter and growth on the American market seems to have overshadowed development of the communication towards other stakeholder groups.

The public is reached through fairs and physical exhibitions like the rocket models in Gothenburg and Linköping, government decision makers are reached through fairs and newsletters and communication towards potential employees is conducted through fairs and collaborations with the university. To mainly communicate through physical representations towards the previously mentioned stakeholders could be argued to go against Cornelissen's (2017) recommendation to communicate through the most effective and efficient channel in order to reach the target group successfully. Instead, based on Deloitte's (2017) argumentation about the adoption rate of technology for various stakeholder group should RUAG Space increase the use of digital channels such as social media in the communication towards certain stakeholder groups.

Based on the change in human behavior described by Deloitte (2017), individuals are spending more time on their phones than ever before. The strategy firms should use to exploit this change is, according to Gilan & Hammarberg (2016) to shift their focus to digital

channels to capture the attention of individuals. It could be argued that two of the key national stakeholders, the public and potential employees, could be considered individuals according to Deloitte's (2017) argumentation for technology adoption and therefore be reached more efficiently through digital channels. Thus, the limited targeting of individuals digitally seems to be another factor in RUAG Space's difficulties of establishing a strong name in Sweden.

The communication team at RUAG Space consists of only five people. It seems like the team is in the beginning of a process that changed the way RUAG Space previously have communicated, see section 5.2.1. The process of updating tools and channels as well as increasing the digital presence have started. The digital world offers new channels and increased stakeholder communication flexibility according to Cornelissen (2017). Among some people in the communication team there seems to be a desire to increase the digital presence while others are more critical. Increased number of channels comes with more work and the chase for additional material in order to fill the channels, something that does not seem to come easily out of the organization. A recent concept introduced in order to increase efficiency in the communication department is the Newsroom approach. The Newsroom approach to communication is aligned with Cornelissen's (2017) structure for organizing communication focusing on reuse of material and complementation of communication channels. Until now, it seems like the linkage between the channels is mainly happening in the digital world and less between physical and digital channels.

6.2.3.3 Constituents

The communication towards different groups must be differentiated depending on the receiver of the message. Crane & Livesey (2003) distinguish between standardized and customized messages towards stakeholders. Among the firms in this study and in the context of complex products, three different aspects forcing more tailored communication could be identified; stakeholder groups, geographical proximity and communication restrictions, see section 5.2.2.

The reasons for differentiating communication between stakeholder groups seems to be the varying level of technical knowledge, different interests and personal gain among the stakeholder groups. The high technological sophistication of the products, and the counterintuitive use of the products compared to how they physically look, forces firms to strategically tailor the messages to increase the recipient's understanding. RUAG Space tries to overcome the knowledge barriers by visualizing, simplifying or using graphical tools. RUAG Space argues that these strategic measures can not only be used for understanding but can also increase the power of the information communicated to the stakeholder groups. Towards the public RUAG Space differentiate the information by rarely talking about the products at all, and instead communicates the long-term impact of the products and positive impact for the society. A similar strategy, focusing on public good, seems to be used also for government decision makers. Due to the turnover of politicians the communication seems to also be tailored at the start of a political term to inform and educate new politicians. The communication customized for potential employees seems to focus on the appeal of the technology and the space industry to attract new employees. However, for the new generation of university graduates, it seems like the communication should also include personal development and growth potential, which appeals to that group.

Another type of communication tailoring suggested by Crane & Livesey (2003) is the local adaption of the communication. As the conditions or agenda varies between countries, a standardized message would possibly not be relevant in all countries in which RUAG Space are active.

The third type of tailoring is due to communication restrictions. It seems like a recurring problem for firms manufacturing complex products that the room for communication is limited. If the firms cannot talk about their products or current projects, they seem instead be forced to change the focus of the conversations. Topics of the communication can then be changed to focus on research areas, general information about the product range or where the products are used today.

6.2.3.4 Feedback

Argenti et al. (2005) emphasize the importance of measuring communication activities in order to determine the success rate. To not measure communication activities can result in decisions based on perceptions and experience instead of facts. The feedback on communication activities is the last piece in Argenti et al.'s (2005) process of communication, closing the iterative loop in order for the feedback to improve further communication activities. Measuring non-digital activities seems to have been and still is a challenge for RUAG Space as well as the other participating firms, see section 5.2.1. The communication team at RUAG Space seems to continuously be trying to improve their activities. However, without the collection of data, the areas for improvement remains unknown and the loop is not closed. The improvements instead seem to be based on experience and the team's perception of what should be improved.

However, tools for measuring non-digital communication activities exist. Based on Kaplan & Norton's (1996) balanced scorecard, Vos & Schoemaker (2004) developed a balanced scorecard for measuring communication quality. However, the fact that the process of measuring and identifying the right measures is difficult is supported by the study of Berger & Meng (2012). A way for RUAG Space to overcome the difficulties of measuring communication quantitatively is to increase the portion of digital communication, in line with Cornelissen's (2017) argumentation of increased two-way communication on digital platforms.

Adoption of digitalization currently seems to be a process for both all the studies firms' communication departments. Some firms have gotten further than others but none of the firms seems to be fully leveraging the effect of using digital tools. Deloitte (2017) describes increased stakeholder understanding and the ability to forecast stakeholder trends based on stakeholder data over time as key digitalization opportunities. The understanding and knowledge about how to use digitalization to leverage communication performance seems to exist within RUAG Space but it has not yet reached down in the organization to the communication department. Except for the data collected automatically from the social media tools, no other data is collected nor analyzed. Collection of data takes time and resources and until further knowledge about data utilization is spread, it seems unlikely for the data collection to start.

7 Conclusions

In this study the impact of three factors - (1) a dynamic industry, (2) product complexity and (3) the stakeholder groups government, the public and potential employees - on strategic positioning have been researched. Furthermore, the core of this study has been to examine the use of communication with the mentioned stakeholder groups as a strategic tool for firms offering complex products to achieve a strong position within a dynamic industry. In order to conduct the research, four research questions were formulated. Below follow the conclusions of the study structured according to the four research questions.

RQ1: How does a dynamic industry affect strategic positioning?

For an established firm, changes in the industry means a substantial challenge. As the industry is changing, the “old state” and the “new state” of the industry coexists. This forces established firms to remain the same to satisfy the demands of the old state of the industry, and simultaneously to adapt to the changes to satisfy the demands of the new state of the industry. A way to cope with this challenge is to focus on important stakeholder groups which ensures that the firm retains a strong position both in regards to old demands and new and future demands.

RQ2: How does product complexity affect strategic positioning?

Technological complexity in the products stem from extensive requirements demanding that the products adhere to certain standards to ensure compatibility. Ecosystem complexity emerges as the requirement of compatibility creates dependencies between the firm and its stakeholders. These dependencies decrease the firm’s ability to radically change the products as a way of differentiation as well as the level of flexibility regarding their actions. However, the dependencies encourage incremental product improvements that do not violate the required compatibility.

RQ3: How do the stakeholder groups government, the public and potential employees affect strategic positioning?

As firms offering complex products in dynamic industries have limited ability to radically change their products, this study suggests that such firms therefore can strategically position themselves through the management of their stakeholders. The study implies that the dynamic industry and the need to satisfy multiple stakeholders increase the importance of identifying and classifying stakeholders in order to manage these in the best way. Further the study suggests that for firms offering complex products that operate in a dynamic industry, the process of identification and classification of stakeholders must be executed continuously as their status might change.

Changes in the industry can have an impact on several aspects of the business. One major aspect, as seen in the space industry, is changed customer demands. To meet the new needs, especially in the high technology environments in which firms offering complex products operate, it is essential to possess the right knowledge. The study suggests that continuous management of the stakeholder group potential employees is one part of proactively coping with industry change.

Another stakeholder group that is important, not just in times of change, is the public. Legitimacy is a key element for this stakeholder group and as explained in the case of RUAG Space, industry and firm legitimacy can change when the environment is changing. The perception of the public matters as the group has the power to impact other stakeholder groups. One group that the public can impact is the government.

As illustrated in the case of RUAG Space, the government possess great power over organizations in terms of for example regulations and business funding. In a dynamic industry, industry change might impact issues related to government decisions and therefore, the study suggests increased importance of this stakeholder group during times of change.

RQ4: How can communication be used as a strategic tool to manage product complexity, stakeholders and changes in the industry?

Communication is a tool for management of stakeholders to firms offering complex products in a dynamic industry. For firms with complex products, there is often an increased number of stakeholders to consider. Firms must identify the importance of each stakeholder group as well as the most efficient strategy for communication. The firms in this study describes CoPS firms' communication as significantly different from communication by other firms. In general, the CoPS firms are regulated in their communication, either in regards to their products or current projects. Combined with these regulations, CoPS firms' products are often of the kind that is difficult to communicate to most stakeholder groups and the communication should therefore be tailored. The communication should be tailored according to the interests of the stakeholder groups or their technical comprehension, where techniques such as visualizations and simplifications can be used for the latter. Another aspect emphasized is to change the topic of the conversation to not focus on the products. Examples of such topics are firm capabilities, larger firm initiatives or public benefits created by the products.

Many industries centered around complex products face industry changes, such as deregulation and privatization. These industry changes force the firms to open up and become more transparent. The increased transparency is executed through communication which increases the importance of the area. The increased importance for firms to communicate with their stakeholders forces decisions about communications to be taken at the top level of management. However, in order to make informed decisions, the decision makers must possess knowledge in the area as these decisions are intended to support the overall strategy of the firm.

This study concludes that legitimacy is essential for CoPS firms' communication. If legitimacy constitutes the prerequisite for the communication, the reputation and brand represent its strength. The difficulties of CoPS firms' communication make the brand and reputation increasingly important. But to establish a strong brand and reputation, constant and consistent communication is essential. Another factor impacting the success of the communication is the manner in which it is conducted. Digitalization enables a larger number of channels than before and therefore increases the communication flexibility. But the increased flexibility also require knowledge about the stakeholder groups and their behavior, and in order to reach the intended stakeholders the firm can be forced to communicate through many different communication channels. The increased amount of work puts pressure on the communications department on efficient and structured work processes.

A strategy largely enabled by digitalization is extension of feedback, both qualitative and quantitative. The data enables evaluation of communication activities and gives the communicators the opportunity to base decisions on data instead of experience or perception. Basing decisions on data increases the quality of the communication activities and therefore eliminates less efficient activities. In the long-term data can also enable increased firm understanding of stakeholder behavior by identifying trends in the data and therefore anticipate stakeholder actions and needs. Understanding stakeholder behavior through data is an opportunity for firms but it requires knowledge about data handling and analysis.

Finally, communication is playing an increasingly large role at firms and represents a useful strategic tool for firms offering complex products to position themselves in dynamic industries. Communication is no longer only limited to the communications department but flows through the whole organization. Thus, the success of firms' communication is not determined solely by the communications departments. It is dependent on the entire organization.

8 Implications and further research

Managerial implications

The managerial implications of this study are mainly aimed towards communication departments and top management at CoPs firms operating in dynamic industries. Thus, the limited flexibility for these firms to quickly adapt to changing conditions increase the importance of communication.

The increased importance of communication entails knowledge and understanding in order for the top management to make legitimate decisions about strategic communication. If the top management of CoPS firms in dynamic industries are able to base their decisions on profound knowledge rather than intuition about an unknown topic, the chance of providing the communications department with the resources needed to perform the job in the best manner increase tremendously. With the power to influence the rest of the organization the top management could enable communication resources aligned with the demand in terms of capabilities, tools and human capital. The top management could also impact the overall perception of communication at the firm and therefore increase participation and contribution to strategic communication outside the communications department.

For the communications department, the segments in the process of strategic communication for firms operating in this contextual environment clearly needs great adaptations due to restrictions, limitations and the variety in stakeholder characteristics. Identification of these factors and the approach to manage the factors is essential and should apply to most firms in this contextual environment in the communication with stakeholder groups.

Legitimacy, brand and reputation were identified factors influencing any type of strategic communication. In the contextual environment of product complexity and a dynamic industry, legitimacy was found to have an increasingly important role as the firms operating in this environment more easily could be questioned by their stakeholders. Thus, the management and awareness of the firm's position in regard to these factors should be carefully evaluated. Causal relationships between these factors and communications results should also be of interest to identify and, if negative, overcome for practitioners.

Theoretical implications

As an industry changes the need for established firms to adapt to the changes is emphasized in literature. For instance, Porter (2008) states that if established firms fail to exploit structural changes in the industry, new entrants or smaller firms may fill the void created by the change.

While this study supports that statement, it also highlights that the pace of adaptation cannot be instant. It is concluded in this study that while an industry changes, the "new reality" and the "old reality" coexists. Established firms are unable to outright change their organization to better suit the new industry conditions. However, the reason for this is not argued to be organizational inertia or lacking capabilities, but rather that a sudden change cannot be afforded. As demonstrated in the main case company in this study, the company is dependent on old business to fuel new developments. For that reason, it becomes necessary to slowly adapt to the changing conditions rather than instantly becoming a new organization. However, it goes without saying that if the adaptation is too slow, the firm will be outcompeted.

Further research

The scope of this case study, with one main case and three contrasting cases have enabled limited comparison of the data. A suggestion for further research is therefore to make a full cross-case comparison of the topic of this study. In a full cross-case comparison, further investigation of communication as a tool for strategic positioning could be established as well as the impact of the industry characteristics and the type of product complexity on the firm.

The investigation of communication in this research study has mainly been from a firm communicator perspective. The perception of the stakeholders, forming the recipients of the communication is however still not fully investigated. Thus, this would be a relevant topic for further research related to this study.

9 References

- Adams, G. and Schvaneveldt, J. (1991). *Understanding Research Methods*. 2nd Edition. New York: Longman.
- Aldrich, H. E., & Fiol, C. M. (1994). Fools rush in? The institutional context of industry creation. *Academy of management review*, 19(4), 645-670.
- Antunes, R., & Gonzalez, V. (2015). A production model for construction: A theoretical framework. *Buildings*, Vol. 5, No. 1, pp. 209-228.
- Argenti, P. A., & Druckenmiller, B. (2004). Reputation and the corporate brand. *Corporate reputation review*, Vol. 6, No. 1, pp. 368-374.
- Argenti, P. A., Howell, R. A., & Beck, K. A. (2005). The strategic communication imperative. *MIT Sloan management review*, Vol. 46, No. 3, pp. 83.
- Baccarini, D. (1996). The concept of project complexity—a review. *International journal of project management*, Vol. 14, No.4, pp. 201-204.
- Berger, B. K., & Meng, J. (2012). Measuring return on investment (ROI) of organizations' internal communication efforts. *Journal of Communication Management*, Vol.16 No. 4, pp. 332-354.
- Brown, S. L., & Eisenhardt, K. M. (1997). The art of continuous change: Linking complexity theory and time-paced evolution in relentlessly shifting organizations. *Administrative science quarterly*, Vol. 42, No. 1, pp. 1-34.
- Bryman, A., & Bell, E. (2003). *Business research methods*. Oxford: Oxford University Press
- Cambridge Dictionary (18-04-26). "General Public", Retrieved at: <https://dictionary.cambridge.org/>
- Cohen, W. M., & Levinthal, D. A. (2000). Absorptive capacity: A new perspective on learning and innovation. In *Strategic Learning in a Knowledge economy* (pp. 39-67).
- Cornelissen, J. (2017). *Corporate communication: A guide to theory and practice*. London: Sage Publications.
- Crane, A., & Livesey, S. (2003). Are you talking to me? Stakeholder communication and the risks and rewards of dialogue. In *Unfolding stakeholder thinking 2: relationships, communication, reporting and performance* (pp. 39-52).
- Davies, A., & Brady, T. (1998). Policies for a complex product system. *Futures*, Vol. 30, No. 4, pp. 293-304.
- Davies, A., & Brady, T. (2000). Organisational capabilities and learning in complex product systems: towards repeatable solutions. *Research policy*, Vol. 29, No. 7-8, pp. 931-953.
- Davies, A., & Hobday, M. (2005). *The business of projects: managing innovation in complex products and systems*. Cambridge: Cambridge University Press.
- Deephouse, D. L. (1996). Does isomorphism legitimate?. *Academy of management journal*, 39(4), 1024-1039.

- Deloitte (2017). Schwartz, J., Collins, L., Stockton, H., Wagner, D., & Walsh, B. (2017). *Rewriting the Rules for the Digital Age: 2017 Deloitte Global Human Capital Trends*.
- Easterby-Smith, M., Thorpe, R., & Jackson, P. R. (2015). *Management and business research*. London: Sage Publications.
- Edmondson, A. C., & McManus, S. E. (2007). Methodological fit in management field research. *Academy of management review*, 32(4), 1246-1264.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of management review*, 14(4), 532-550.
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of management journal*, 50(1), 25-32.
- ESA (2008). *New owners of Saab Space*. Retrieved April 10, 2018 at: http://www.esa.int/swe/ESA_in_your_country/Sweden/Saab_Space_har_bytt_aegare
- ESA (2018) *What is ESA* (2018). Retrieved February 14, 2018 at: https://www.esa.int/About_Us/Welcome_to_ESA/What_is_ESA
- Ethiraj, S. K., & Levinthal, D. (2004). Modularity and innovation in complex systems. *Management science*, Vol. 50, No. 2, pp. 159-173.
- Freeman, R. E. (2010). *Strategic management: A stakeholder approach*. Cambridge: Cambridge university press.
- Gilan, A., & Hammarberg, J. (2016). *Get digital or die trying*. Stockholm: Kalla kulor förlag.
- Hallahan, K., Holtzhausen, D., Van Ruler, B., Verčič, D., & Sriramesh, K. (2007). Defining strategic communication. *International journal of strategic communication*, Vol. 1, No. 1, pp. 3-35.
- Hansen, K. L., & Rush, H. (1998). Hotspots in complex product systems: emerging issues in innovation management. *Technovation*, Vol. 18, No. 8-9, pp. 555-590.
- Hillman, A. J., & Hitt, M. A. (1999). Corporate political strategy formulation: A model of approach, participation, and strategy decisions. *Academy of management review*, Vol. 24, No. 4, pp. 825-842.
- Hillman, A. J., Keim, G. D., & Schuler, D. (2004). Corporate political activity: A review and research agenda. *Journal of Management*, Vol. 30, No. 6, pp. 837-857.
- Hobday, M. (1998). Product complexity, innovation and industrial organisation. *Research policy*, Vol. 26, No. 6, pp. 689-710.
- Hobday, M., & Rush, H. (1999). Technology management in complex product systems (CoPS)-ten questions answered. *International Journal of Technology Management*, Vol. 17, No. 6, pp. 618-638.
- Johnson, N. (2009). *Simply complexity: A clear guide to complexity theory*. London: Oneworld Publications.
- Kaplan, R. S., & Norton, D. P. (1996). Using the Balanced Scorecard as a Strategic Management System. *Harvard Business Review*, 75.
- Knoke, D. (1985). The political economies of associations. *Research in political sociology*, 1(1), 211-242.

- McGuire, J. L., Hasskarl, H., Bode, G., Klingmann, I., & Zahn, M. (2007). Pharmaceuticals, general survey. Ullmann's Encyclopedia of Industrial Chemistry.
- Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of management review*, Vol. 22, No. 4, pp. 853-886.
- Morgan Stanley Research (2017). *Space: Investing in the Final Frontier*. Retrieved March 22, 2018 at: <https://www.morganstanley.com/ideas/investing-in-space>
- Paikowsky, D. (2017). What Is New Space? The Changing Ecosystem of Global Space Activity. *New Space*, Vol. 5, No. 2, pp. 84-88.
- Palazzo, G., & Scherer, A. G. (2006). Corporate legitimacy as deliberation: A communicative framework. *Journal of business ethics*, Vol. 66, No. 1, pp. 71-88.
- Phillips, R. A., Berman, S. L., Elms, H., & Johnson-Cramer, M. E. (2010). Strategy, stakeholders and managerial discretion. *Strategic Organization*, Vol. 8, No. 2, pp. 176-183.
- Porter, M. E. (1996). What is strategy?. *Harvard Business Review*, Vol. 74, No. 6, pp. 61-78.
- Porter, M. E. (2008). The five competitive forces that shape strategy. *Harvard business review*, Vol. 86, No. 1, pp. 25-40.
- Prahalad, C. K., & Hamel, G. (1994). Strategy as a field of study: Why search for a new paradigm?. *Strategic management journal*, Vol. 15, No. S2, pp. 5-16.
- Reinold, T., & Tropp, J. (2012). Integrated marketing communications: How can we measure its effectiveness?. *Journal of Marketing Communications*, Vol. 18, No. 2, pp. 113-132.
- Robson, C., & McCartan, K. (2016). *Real world research*. John Wiley & Sons. Chichester.
- RUAG Space (2017). *RUAG News*. Retrieved February 10, 2018 at: <https://www.ruag.com/en/news/ruag-space-adapts-organizational-structure-reflect-product-orientation>
- RUAG Space (2018a). *About RUAG Space*. Retrieved February 10, 2018 at: <https://www.ruag.com/en/products-services/space>
- RUAG Space (2018b). *RUAG Space new facility*. Retrieved February 10, 2018 at: <https://www.ruag.com/en/news/ruag-space-sweden-opens-new-facility-linkoping-and-doubles-its-onsite-capacity>
- Rue, L. W., & Holland, P. G. (1989). *Strategic management: Concepts and experiences*. New York, NY: McGraw-Hill.
- Saunders, M., Lewis, P. and Thornhill, A. (2009) *Research methods for business students*. 5th Edition, Harlow: Pearson Education.
- Schrogl, K. U., Baranes, B., Venet, C., & Rathgeber, W. (Eds.). (2011). *Yearbook on space policy 2008/2009: Setting new trends*. Wien: Springer Science & Business Media.
- Skaggs, B. C., & Youndt, M. (2004). Strategic positioning, human capital, and performance in service organizations: A customer interaction approach. *Strategic Management Journal*, Vol. 25, No. 1, pp. 85-99.

Vos, M., & Schoemaker, H. (2004). *Accountability of communication management: A balanced scorecard for communication quality*. Utrecht: LEMMA Publishers.

Weidenbaum, M. L. (1980). Public policy: No longer a spectator sport for business. *Journal of Business Strategy*, 1(1), 46-53.

Yin, R.K. (2003) *Case Study Research: Design and Method (3rd Edition)*. London: Sage Publications.

Zerfass, A., & Viertmann, C. (2017). Creating business value through corporate communication: a theory-based framework and its practical application. *Journal of Communication Management*, Vol. 21, No. 1, pp. 68-81.