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The Acquisition of Roxar by Emerson: The Good Child of the Good Parent?

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Abstract

The aim of the master thesis is to analyze the case of Roxar's acquisition by Emerson and to perform the discussion about how a change of ownership has transformed the company and whether this transformation has created value for Roxar. As the case discussed in this paper addresses the changes in the company caused by the acquisition, the analysis is build around the Parenting advantage theory, supplemented by other models and theories. The analysis is performed using the data collected from semi-structured interviews and document analysis. First, the potential benefits of acquisition are concerned by analyzing internal characteristics of both companies in addition to the external environment. Second, the post-acquisition realized benefits are discussed in details. The analysis provides a clear insight on the acquisition and it is concluded that Emerson managed to create value for Roxar through parenting advantage. Findings of the paper could present some guidance on how MNCs can affect smaller companies via acquisitions.

Contents

Abbreviations

CEO Chief Executive Officer

EPM Emerson Process Management

HRM Human Resource Management

IP Intellectual property

GI-LR Global Integration, Local Responsiveness

MNC Multinational corporation

MD Managing Director

MPM Multi Phase Meter AS

NYSE New York Stock Exchange

OSE Oslo Stock Exchange

RFM Roxar Flow Measurement

R&C Resources and capabilities

R&D Research and development

VP Vice President

VRIO Valuable, rare, hard-to-imitate, organizationally embedded

1. Introduction

Contemporary business environment represents harsh conditions in which firms must perform wisely, aggressively and innovatively in order to sustain their market position. It has become difficult not only to develop competitive advantage but, more importantly, - to strengthen it constantly.

Norway represents a market where many companies have built their competitive advantage around advanced technology offering superior products, services and solutions, especially in oil and gas industry, which evolved after oil was discovered in 1969 and Norway became one of the main oil and gas exporting countries. Since then, the country has seen dozens of remarkably outstanding companies founded providing leading technology products and services. Yet the modern world, so much globalized and technology-intensive, threatens sustainability of the business model so much exposed to the risks of technology being outperformed by other products, being imitated by other players, or being pushed out by superior technology. The larger the industry, the more geographically spread out its members, and the larger saturation of the market, the more importance cost management, efficient sales channels and global networks gain against advanced technology in sustaining the market leadership.

One of the companies having experienced these market forces has been Roxar AS (later referred to as Roxar), the leading supplier of flow measurement products and services to oil and gas companies. More interestingly, a couple of years ago the firm was acquired by an American multinational company (MNC) Emerson Electric Co. (later referred to as Emerson).

1.1 Problem Statement

Following the trend of the acquisitions of Norwegian companies by large MNCs, Roxar joined Emerson - one of the world's leading instrumentation producers. The acquisition has not been planned or foreseen as a step in the organic development of the company; yet, Roxar had faced several challenges as an independent company, and the acquisition was viewed to provide solutions to them.

The acquisition of Roxar by Emerson represents an interesting case of the discussion how a change of ownership has transformed the company and whether this transformation has created value for Roxar. Roxar and Emerson are different in many aspects, including size, management style, corporate culture, and product range; thus, it is primarily useful to consider how the companies have performed in identifying and realizing the potential synergies and how the acquisition has benefitted Roxar to better address the challenges it faced both internally and externally and to strengthen its competitive advantage and market leadership in the global arena. Analysing the case of Roxar and its acquisition by Emerson we intend to identify whether the strategic change related to the acquisition has been relevant, corresponding to the needs of Roxar to perform successfully. It is vital to mention, that the paper presents the analysis as our interpretation of the case using the data collected within the study. The case is yet limited to the discussion around Roxar's two product divisions – subsea and topside -, both belonging to Roxar Flow Measurement (RFM) and the flow measurement industry. The limitation has mainly occurred due to the research sample provided by the company itself, which, as stated by Roxar, was formed from the representatives of divisions where the acquisition by Emerson has brought changes into the operations.

The case is of particular interest to identify whether the Norwegian company could have benefitted from the American acquirer and whether and how it has happened. The analysis of the particular situation of Roxar could provide some guidance on how, in general, MNCs affect smaller companies and whether any value creation can be expected as a result of that.

1.2 Research Purpose and Question

The master thesis is aimed at discovering the evolvement of Roxar through the acquisition by Emerson, and whether this evolvement has benefitted Roxar in addressing both internal and external challenges. In order to perform the discussion of the case of Roxar and its acquisition, several questions are posed to guide the authors throughout the investigation. The master thesis should answer **the main research question: How has the acquisition by Emerson affected Roxar?** To be able to find answers to it, several **sub-questions** follow:

- What were the challenges Roxar faced?

- Which strategy did Roxar pursue before the acquisition and how well did it address the challenges?
- Did Emerson have the right capabilities to contribute to Roxar in addressing its challenges?
- How exactly has Emerson changed Roxar?
- Have these changes contributed to strengthening of Roxar?

1.3 Research Structure

In order to analyze the above-mentioned points of departure for the analysis to follow, it has been decided to build the research study around two aspects: the potential benefits of the acquisition of Roxar by Emerson and the realization of these benefits.

We start by looking at the potential benefits which the acquisition represented. To identify them it is important to consider how well Roxar addressed the challenges posed by the industry, thus both the external and internal factors have to be considered. External factors concern the industry characteristics, whereas internal – Roxar's resources and capabilities, value chain, and organizational factors. Based on that it is possible to evaluate how appropriate the strategy of Roxar was in responding to the industry forces and whether the company had developed the necessary internal strengths. All of that will help identifying the places of the necessary improvements at Roxar, which would allow the company to better respond to the industry specifics and thus build a stronger position in the market. Furthermore, it is crucial to identify whether Emerson possessed the right capabilities to bring the necessary improvements. Later it is necessary to analyze whether the potential benefits, which the acquisition represented, have been realized. Thus the evaluation around the ways how Emerson could bring value to Roxar is needed. And finally, it should be looked at the appropriateness of Roxar's current strategy, influenced by Emerson and changes led by the acquisition, to identify whether now Roxar is better at responding to the industry specifics on a global scale. This sequence is augmented by the previous literature findings discussed later, and thus is built on appropriate theories and models.

The master thesis is organized in 6 parts: introduction, background information (overview), literature review, methodology, analysis and conclusion. The introduction, where the case is presented, is followed by the overview of Roxar, Emerson and the acquisition to provide

more detailed information about the companies and the acquisition case. Afterwards, the findings of previous research are discussed, integrating the main theoretical models to be later used in the analysis part. Later, methodology of the thesis is formulated. Then, the analysis part follows, focusing on identifying the potential benefits of the acquisition of Roxar by Emerson and whether these benefits have been realized after the acquisition. Finally, based on the analysis results, conclusion, limitations of the research and suggestions for further research are presented.

2. Background Information

2.1 Roxar

Roxar AS is an international company providing technical products and services for reservoir management and production optimisation to the upstream oil and gas industry (Emerson Process Management, 2011a). It has two divisions: Flow Measurement and Software Solutions. The company is headquartered in Stavanger, Norway, and operates in 19 countries with around 900 employees. In April 2009 Roxar was acquired by Emerson and since then is a part of Emerson Process Management (EPM) Group (Emerson Process Management, 2011d).

2.1.1 History

Roxar was formed in Norway as a public company quoted at the Oslo Stock Exchange (OSE) when Multi-Fluid ASA merged with Smedvig Technologies AS in 1999. Origins of Smedvig Technologies AS go back to 1984 when it started offering technical solutions within drilling and production as Smedvig IPR AS. Since then Smedvig Technologies AS led a very active development and acquisition strategy, both in Norway and internationally. (Emerson Process Management, 2011d).

After the establishment of Roxar in 1999, the company acquired several other firms (Fluenta AS, which later was spun off, Onics, EnergyScitech). In 2003 the company was delisted after the acquisition by Lime Rock Partners and Smedvig AS. In 2006 Roxar was acquired by a private equity firm Arcapita, but already in 2007 was listed again at OSE as Roxar ASA after the acquisition by CorrOcean ASA. In 2009 the company was delisted again following the acquisition by Emerson (Emerson Process Management, 2011d).

2.1.2 Current Performance

With more than 10 years of experience in global oil & gas upstream sector, Roxar has become a global leader in both hardware and software solutions for reservoir management (Roxar, 2011a). Roxar's hardware product portfolio includes instrumentation for topside, subsea and downhole monitoring developed by RFM division. The technologies, enabling operators to run reservoir management and make flow assurance decisions, include high

temperature reservoir monitoring, multiphase flow metering, sand erosion sensors, oil in water monitoring and corrosion detection (Emerson Process Management, 2011b). At the same time, superior software solutions provided by Roxar Software Solutions division are designed to create informed field development and reservoir management decisions. Roxar Software Solutions is a global leader in 3D geological modelling, analysis and integrated simulation of oil reservoirs, which comprises reservoir modelling suite Irap RMS, Tempest reservoir simulation software and EnABLE – history matching and uncertainty estimation software (Emerson Process Management, 2011a).

Currently Roxar's revenues are estimated around 200 million USD from operations in 28 offices in 19 countries, in Europe, the Americas, Africa, CIS, Asia Pacific and the Middle East (Emerson Process Management, 2011a). In 2011 Roxar operates four world area divisions or hubs in Kuala Lumpur, Dubai, Houston and Moscow. Hubs are perceived as self-sufficient administrative units with their own finance and human resource teams, permanently employing sales people, service coordinators, field and project engineers. Moreover, Roxar has established several regional offices in such countries as Brazil, Australia and UK amongst many others, which as a rule are under the supervision of world area divisions or hubs. Regional offices mainly employ sales and service people who may serve needs of clients in different countries. In addition, Roxar hires several country managers, e.g. in China, India, Saudi Arabia, who are in charge of Roxar's performance in these particular countries (Forus, 2011). It is crucial to emphasize that despite of the fact, that Roxar's sales and service employees are quite dispersed; strategically important activities of value chain such as innovation and technology development take place solely in Norway. In addition, for now production facilities have been located in Norway as well, with assemblies in Bergen, Stavanger, and Trondheim. Recently, however, the company has decided to move its topside division production to Romania, Cluj (Kolstad, 2011).

Roxar supplies its products and services to the world's leading fields, installed, among others, by ExxonMobil, Total and Statoil. Rystad Energy Global has estimated that 12% of world's oil and gas production is facilitated by Roxar meters (NCE Subsea, 2011).

The company is a world class provider of customer services. All Roxar products are backed up by expert service organization throughout the product life cycle. High quality service offerings include installation, ongoing maintenance, data collection, analysis and decommissioning. Significantly, Roxar focuses on preventive support in order to predict

equipment failure, rather than waiting for emergency call-outs. In addition the company provides 24/7 remote technical support for distant locations (both land and sea) (Roxar, 2011b).

Roxar highly relies on technology innovation, which has been a main driver of the company's development and, as the company states itself, the 'cornerstone to success', thus the company has built its business model around innovation (Roxar, 2011a). This also explains company's slogan: "Think Roxar. Think Innovation". More than 50 scientists are constantly involved in the development of future generation of instrumentation solutions. Importantly, the company focuses on global customers, jointly developing technology to meet the industry needs for developing future products (Emerson Process Management, 2011a). 65% of 2007 sales of Roxar instrumentation came from products not commercially available before 2002, which is a great achievement for the industry, which is well-known for being conservative. Apart from that, engineering teams constantly work on improving the design and features of the existing solutions (Roxar, 2011a).

2.2 Emerson

Emerson Electric Company is a diversified global manufacturing and technology company, offering a wide range of electrical, electromechanical, and electronic products and engineering services for commercial, industrial, and consumer markets. Emerson is headquartered in USA (St. Louis, Missouri), employs around 130,000 people in 240 locations worldwide (Datamonitor, 2011; Emerson, 2011a).

2.2.1 History

Company's origins date back to 1890, when Emerson was founded as a manufacturer of electric motors and fans. In 1950s Emerson put focus on research and development (R&D) and began international expansion. The stage of decentralization and diversification of the company was started. The company was operating with a focus on cost reductions, quality improvements and formal planning process. In the following fifteen years Emerson targeted high-growth markets and acquired 36 companies to diversify its portfolio. By 1973 the company employed more than 30,000 employees and operated 82 plants. (Emerson, 2011c)

After that the corporate strategy was turned in the direction of product and technology innovation, with even greater focus on acquisitions and international growth, yet maintaining the best-cost producer strategy. In 1989 the first advanced technology centre was opened, proving Emerson's effort to support engineering and innovation. In 2000 Emerson's strategy was adjusted to reflect technology leadership and commitment to cross—divisional collaboration. Emerson remained very aggressive in international expansion strategy, and establishments in China and India followed. In 2002 Emerson emphasized it being technology-focused by running its first advertising campaign with the tagline "Emerson. Consider It Solved." In 2006 Emerson ran its first TV commercial to communicate the company's global orientation and capabilities. (Emerson, 2011c)

The history of the company shows, how over 120 years Emerson has transformed from a regional manufacturer into a global provider of technological solutions with a remarkably stable financial growth and successful performance.

2.2.2 Current Performance

Emerson offers a wide range of products and services in five business segments: Process Management, Industrial Automation, Network Power, Climate Technologies, and Tools and Storage. Each segment is a portfolio of individual brands. The company is listed on New York Stock Exchange (NYSE) and is one of Fortune 500 companies. In 2010 Emerson generated more than 21 billion USD revenues. 37% of sales came from sales of new products, and only in 2010 Emerson was granted more than 750 patents worldwide. Emerson is present in 150 countries, with 160 out of 240 manufacturing locations being outside of USA, and generating 57% of total sales (Emerson Electric Company, 2011).

Emerson is focused on achieving success through development of industry-leading technology, international operations, and customer-orientation (U.S. China Business Council, 2008). The company strives to include and develop every business in its portfolio to be an industry leader, and to offer its customers across the world one-standard service and technology expertise (Emerson, 2011b).

The mission and values are built in the company's brand promise: 'Emerson is where technology and engineering come together to create solutions for the benefit of our customers, driven without compromise for a world in action' (Emerson, 2011a).

2.3 Acquisition

In April 2009 Roxar was acquired by Emerson: Aegir Norge Holding, a wholly owned subsidiary of Emerson, agreed with Roxar's board to launch a voluntary offer for 100% of Roxar's shares, amounting to around 179 million USD (Penn Well Publishing , 2009). As a result of the acquisition, Emerson also redeemed Roxar's debt of 212 million USD (Reed Business Information Australia Ltd., 2009). Roxar's leaders claimed the offer to be the best among the existing strategic alternatives, and to provide a good fit for the partnership between Emerson and Roxar, as both companies operate in complementing market segments with alike cultures of technology and customer-focus (Penn Well Publishing, 2009). Emerson's leaders saw the acquisition to complement the company with Roxar's knowledge and technology - as of the largest provider of subsea instrumentation - to extend the range of solutions offered to customers in order to meet the automation challenges of offshore subsea (Penn Well Publishing, 2009).

The acquisition resulted in the creation of "the world's first integrated automation solutions company whose products span from subsea oil and gas reservoirs, to platform and floating production, to transmission, and ultimately through refining and production of goods" (Emerson Process Management, 2011b). Roxar is now a part of EPM segment, which provides process industries, including oil and gas, with solutions for better management through control systems and software, measurement instruments, valves, and industry expertise. Moreover, Roxar's technology for reservoir management and production optimization is one of the Emerson's top brands in automation technology (Emerson Process Management, 2011c).

Although the companies are both technology-oriented and produce complementary products, several important aspects where Roxar and Emerson are different can be identified: (i) age: rather young vs. old, (ii) corporate culture: Norwegian and entrepreneurial vs. American and industrial, (iii) diversification level: product offering within one industry vs. across various industries, (iv) level of product standardization: rather customized vs. mainly standardized. These similarities and differences provide a good area for discussion about how successful the acquisition has been.

Having a more thorough overview of both Roxar and Emerson, we proceed with the overview of the existing literature which forms a base for further analysis.

3. Literature Review

To answer the research questions posed the previous literature findings have been addressed. The scope of the topics covered in both literature review and analysis is built on the research sequence discussed in the introduction. As the case discussed in this paper addresses the changes in the company caused by the acquisition, it has been found relevant to build the analysis around the Parenting advantage theory by Goold, Campbell, & Alexander (1994).

As Roxar moved from being an independent company, it transferred corporate-strategy decisions to Emerson's responsibility. Emerson is thus considered a corporate parent, following the definition by Goold, Campbell, and Alexander (1994). They refer to two primary questions which form corporate-level decisions (Goold, Campbell, & Alexander, 1994). Prior one concerns the choice of businesses in which the company should invest either through ownership or joint ventures, and the latter relates to the way the parent influences the businesses under its control (Goold, Campbell, & Alexander, 1994). Corporate partner should then strive for parenting advantage, i.e. Roxar under supervision of Emerson should perform better than alone or under stewardship of any other parent. This way, parenting advantage should have guided Emerson's decision about adding Roxar's business into its portfolio and about the structure of Emerson and its activities. Goold, Campbell, and Alexander (1994) emphasize that the same way a competitive advantage links to business strategy, parenting advantage does to corporate strategy. More importantly, a successful parent which has developed a sustainable parenting advantage enhances and helps its businesses to sustain their competitive advantages (Barney, 2011; Kogut & Zander, 1992; Prahalad & Hamel, 1990; and Teece, Pisano, & Shuen, 1997).

The empirical data suggests, however, that quite rarely businesses in corporate portfolios are doing better than they would as independent companies or as parts of other corporate parents. Nevertheless, some multi-business corporations manage to create value for their businesses, to gain respect from business unit managers and to build the company's market value larger than the sum of its parts separately (Campbell, Goold, & Alexander, 1995a; Hill, Hitt, & Hoskisson, 1992). This is often justified by the synergy hypothesis (Bradley, Desai, & Kim, 1988; Seth, 1990; Seth, Song, & Pettit, 2000).

Successful parents can create significant value, but several conditions can be identified. Following Campbell, Goold, and Alexander (1995b), the analysis should start with

examination of critical success factors of the business, then areas in the business where performance can be improved are documented. Afterwards the characteristics of the parent should be analysed, to understand how well it fits with business's opportunities and needs. Finally, the judgement can be testified against the performance the business has experienced under the parent (Campbell, Goold, & Alexander, 1995b).

3.1 Potential Benefits of the Acquisition

The key point in value creation from operating under stewardship of a parent company is to identify and examine the fit between the parent and the business, which is illustrated as a framework in Figure 1 (Goold, Campbell, & Alexander, 1994).

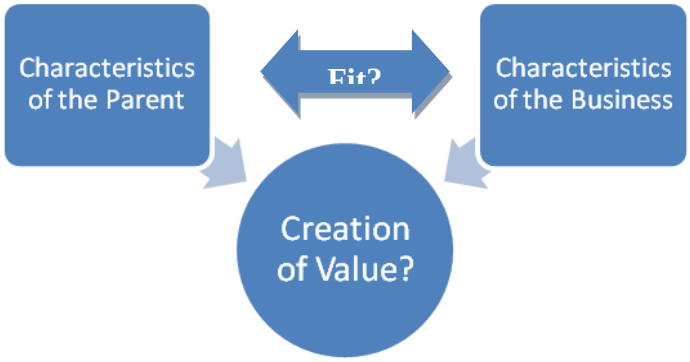

Figure 1. The Need for Fit, by Goold, Campbell, and Alexander (1994).

Value can be created only when several conditions are present. First of all, the business should have the opportunity to improve its performance (e.g. the value chain could be optimized to cut the costs or the particular distribution channels should be changed as they do not correspond to the needs formed by the industry), which is referred to as a parenting opportunity. Secondly, the parent in turn should know how to achieve the improvements and should have the right resources and skills to exploit the opportunity. Finally, the parent should understand the critical success factors of the business to be able to influence it in the appropriate way and avoid guiding it in a wrong direction. When all of these match, the fit is present, if any of the conditions are not fulfilled the threat of misfit exists. Importantly, as Campbell, Goold, and Alexander (1995a) emphasize, this fit is a 'two-edged sword': if the fit exists, it enhances value creation, if it doesn't - value is destroyed. Value can be easily destroyed through a damaging influence (e.g. by establishing irrelevant incentives for the businesses) or through unjustified costs (e.g. procurement of unneeded software or data) (Goold, Campbell, & Alexander, 1994).

The business should be evaluated in terms of parenting opportunities and critical success factors. The prior refers to various opportunities where a parent can create value, which may be a weak management team or lack of expertise in a certain area, the latter deals with factors which influence business-level success. These can be ultimate importance of personnel or necessity of technical leadership in the industry (Goold, Campbell, & Alexander, 1994). It is crucial to mention, that parent's characteristics must be well-suited to the critical success factors. To identify the parenting opportunities and critical success factors, the external and internal environment of Roxar should be considered.

3.1.1 Evaluating External Environment

The analysis of external environment, following Porter's model of Five Forces and the Industry Globalization by Yip, is aimed at identifying threats and opportunities posed by the industry.

Five Forces

According to Porter, industry structure or external environment is defined and shaped by five competitive forces including rivalry, customers, suppliers, new entrants and substitute products (2008) (see Figure 2). High rivalry, which might take different forms, including price competition, service improvements, new product innovations and the like, inevitably limits the profitability of industry. At the same time, powerful suppliers capturing more of the value for themselves by charging higher prices, limiting quality or services, or shifting costs to industry participants, can undermine industry's profitability. In the same vein, powerful buyers can capture more value by forcing down prices, demanding better quality or more service (thereby driving up costs), and generally playing industry participants off against one another, all at the expense of industry profit. Likewise, in industries where there are small capital requirements, non-existent economies of scale, low customer switching costs and equal access to distribution channels the threat of new players is emphasized, thus having a positive impact on the development of rivalry and leading to restrained profit potential. Lastly, substitute products or services can limit industry's profit potential by placing a ceiling on prices (Porter, 2008).

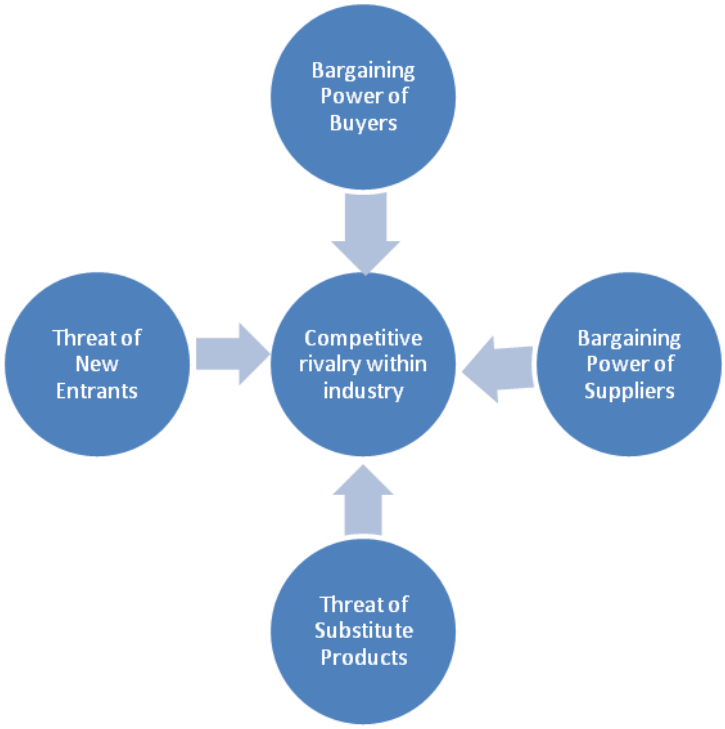

Figure 2.Five Forces (Porter, 2008).

Overall, intensive competition, low barriers to entry, high power of customers and suppliers in addition to a wide range of substitute products, together or individually can have a negative impact on industry's profitability. Hence, awareness of five forces is vital for a company to stake out a position which is more profitable and less vulnerable to attack. By sizing up internal strengths and weaknesses companies should develop effective strategies to neutralize external threats and exploit external opportunities (Barney, 2011).

Industry globalization

As Roxar operates internationally and the flow measurement industry goes beyond any particular country, it is also crucial to evaluate whether the industry forces market players to be global, which will provide evidence whether globalization is beneficial for Roxar. Yip argues that **industry globalization drivers** are divided into four categories: cost drivers, market drivers, competitive drivers, and government drivers (2003). Cost drivers may include global economies of scale, sourcing efficiencies, differences in costs of production factors. Market drivers are usually formed by global customers and channels. Globalized competitors, opportunity to transfer competitive advantage, increasing trade volumes are referred to as competitive drivers. Finally, government drivers are represented by favourable trade policies, common marketing regulations and technical standards (Yip, 2003). Evaluation of the industry globalization drivers helps to understand whether Roxar can

create value by operating globally and to identify whether the company has realized this value.

3.1.2 Evaluating Internal Environment

The analysis of internal environment enables to detect Roxar's strengths and weaknesses which resulted in or prevented the company from gaining sustainable competitive advantages. The question is of high importance in order to understand how Emerson could help Roxar to exploit more efficiently its strengths and neutralize weaknesses after the acquisition. A Resource-based view by Barney, Value Chain model by Porter, and Global Strategy Levers and Organizational Factors by Yip are applied in the analysis.

Resource-based View

A resource based view (VRIO) of the firm has brought together research on organizational success factors and is a widely accepted framework focusing on analyzing organizational strengths and weaknesses (Barney, 2011). From this perspective an organization is a set of productive resources and capabilities (R&C). Resources are defined as assets used to create value for customers, whereas capabilities – as skills the company possesses and uses to coordinate and effectively use its resources (Hill & Jones, 2008). VRIO focuses on the idiosyncratic, costly-to-imitate R&C controlled by a firm. The framework is applied to firms in order to understand where these firms have competitive advantages, how sustainable competitive advantages are likely to be, and what sources of competitive advantages are. The framework suggests that sustained competitive advantage can be built if the company has R&C which are 1) valuable - helps to exploit external opportunities and neutralize threats 2) rare - possessed by a few companies, 3) costly to imitate and 4) exploited by the organization (Peng, 2006).

Several authors have generated lists of firm attributes that may be thought of as R&C. Generally, they are split in four categories: financial capital, physical capital, human capital, and organizational capital (Barney, 2011). At the same time, Peng offers an alternative classification of a company's R&C (2006). According to Peng, R&C developed by companies can be divided into 1) tangible and 2) intangible R&C and their strength is what leads to a competitive advantage (2006) (see Figure 3). Tangible R&C are defined as observable, easily quantified and can be organized in four categories: financial, physical, technological and organizational R&C. Financial R&C refer to different money resources a

firm uses to conceive of and implement strategies. Physical R&C include the physical assets exploited by a firm, facilities and equipment, geographic location and its access to raw materials. Technological R&C comprise technological advancements supported by intellectual property (IP), including patents, trademarks, copyrights, trade secrets and industrial design rights. Organization R&C are an attribute of collections of individuals, including formal reporting structure, formal planning, controlling and coordinating systems. In contrast, intangible R&C are harder to observe and very often impossible to quantify. Examples of intangible R&C comprise human, innovation, and reputation R&C. Human capital includes training, experience, competence, relationships and insight of individual managers and workers in a firm. Innovation R&C describe skills and procedures to generate and introduce new products/services. Finally, reputation refers to R&C to build and sustain reputation of a company (as a good product provider, employer and responsible corporate citizen). It is vital for every company to identify the key R&C to develop a long-term strategy and to bundle R&C according to the value chain built by the company (Peng, 2006). According to Hill & Jones, intangible R&C tend to be more difficult to imitate, thus ensuring a more secured position in the market (2008).

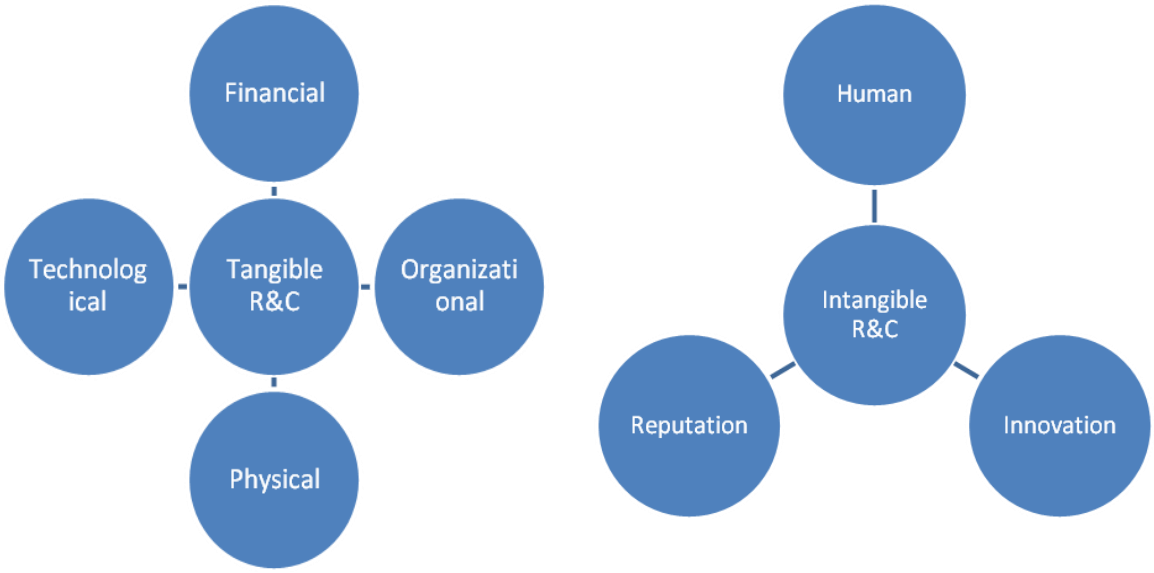

Figure 3.Resouces and Capabilities (Peng, 2006).

Importantly, one way to analyze R&C is to engage in value chain analysis, which forces to think about R&C at a very micro level. Barney argues that it is helpful to analyze how each of the value chain activities is affected by company's R&C (2011).

Value Chain

The value chain groups a firm's activities into several categories, separating between primary and support activities (Porter, 1996) (see Figure 4). Those directly involved in producing, marketing, delivering and providing a product or service are marked as primary activities. In contrast, those that create, source, and enhance inputs and technology, in addition to performing such crucial functions as raising funds or overall decision-making are called support activities. Differences among competitors' value chains are the main source of competitive advantage. To understand the underpinning of competitive advantage requires understanding what a firm does in disaggregated value chain. Importantly, competitive advantage is developed when a firm has the ability to perform disaggregated activities at a lower cost than rivals or to perform them in unique ways that creates non-price buyer value and supports premium price types of customers (Porter, 1986).

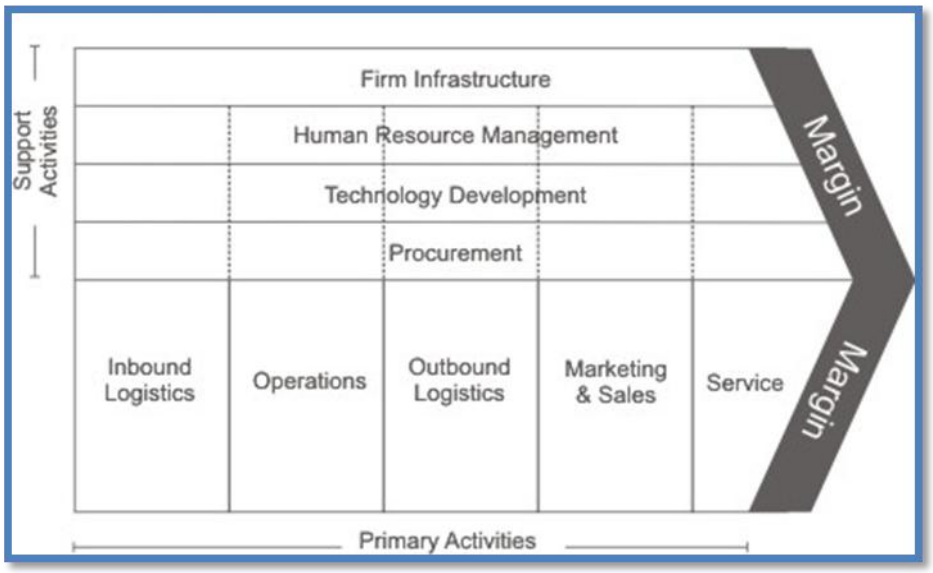

Figure 4. Value chain (Porter, 1996).

Globalization of the Company

Again, following the need for global operations of Roxar, researchers suggest to look how well organization of the company is prepared for globalization. Based on Yip (2003), whose theory has been addressed when looking at the globalization potential of the industry, the company has to consider both global strategy levers and the organizational factors. Global strategy levers refer to strategic dimensions, which include market participation, standardization of products/services, location of activities in value chain, and coordination of competitive moves (Yip, 2003). Organizational factors, as argued by Yip (2003), can

enhance or hamper globalization of strategy, thus appropriate organizational structure, culture, people, and management processes should be in place.

3.1.3 Strategy

Altogether the analysis of external and internal environments of Roxar helps understand which challenges Roxar faced, and how the company could address them by strategic change, and whether Emerson could contribute Roxar in that. Importantly, the globalization issues have been addressed as well, which are of critical importance for Roxar taking into consideration the industry characteristics and the company's evolvement as an international company.

Understanding its strengths and weaknesses, a company is ready to make a strategic choice, which determines how successful the company performs in the market (Barney, 2011). Strategic choice can be characterized in various ways. Taking into consideration the transformation of Roxar from an independent specialized yet international company to becoming a part of a multinational corporation (MNC), we would like to consider the framework of global integration and local responsiveness (GI-LR). GI-LR framework is used to examine strategy in the international context (Fan, Nyland, & Zhu, 2008; Roth & Morrison, 1990). Researchers argue that organizational structure evolves following the strategic changes caused by increase in international activities (Morrison & Roth, 1992; Negadhi & Welge, 1984). The framework originated from prior studies (Doz & Prahalad, 1991; Prahalad & doz, 1987), which identify the pressures on strategy formulation coming from both the need to be globally integrated and to maintain local responsiveness to the market.

Pressures to become globally integrated originate from various factors, as suggested by various researchers. They include (i) the importance of multinational customers (especially relevant for Roxar as a business-to-business operating company serving global clients) and multinational competitors, (ii) differences in natural resource endowments, (iii) flexibility and bargaining power of a multinational network, (iv) sourcing efficiency, (v) need for intense investments and intense technologies, (vi) operating integration, (vii) scale economies and (viii) development of homogeneous customer needs (Fan, Nyland & Zhu, 2008; Kogut, 1984; Prahalad & Doz, 1987; Yip, 1989). Moreover, Yip (2003) argues that "strategy is global to the extent that it is integrated across countries" (p.1). Yip (2003) also

suggests that the firm needs constantly to analyze costs and benefits of globalization in particular conditions the company faces to understand which aspects of strategy need to be globalized. Potential globalization benefits are formed by interaction of three factors, which have been discussed above: industry globalization drivers, global strategy levers, and global organizational factors, which make up the globalization triangle (see Figure 5) (Yip, 2003).

Figure 5. The Globalization Triangle (Yip, 2003).

Porter (1986) emphasizes the importance of capturing linkages among countries in a global industry by configuring value chain, evaluating performance of firm's activities and sharing them across units. The basic choices include two main areas: 1) configuration of activities; 2) coordination of activities. Configuration focuses on where each of the activities in a firm's value chain is located. Particular activities can occur in one location or can be dispersed to many in order to gain comparative advantage and productivity advantage. Comparative advantage occurs when activity is performed in a location with the most cost effective pool of raw materials or people. Productivity advantage is achieved if activities are located in the countries with most attractive environments for innovation and productivity growth. In contrast, coordination focuses on the nature and extent to which dispersed activities are coordinated in a network and remain autonomous, that is tailored to local circumstances. A number of forms of coordination are possible, including setting standards, exchanging information, and allocating responsibility among sites. Allocating responsibility for producing particular products to different location can ensure global sourcing and unleash

economies of scale. At the same time, coordination involving information exchange can enhance operational effectiveness through transfer of knowledge (Porter, 1998). This is another way to look at interference of the three factors of globalization. Additionally, Fayerweather (1982) and Fayerweather and Kapoor (1975) argue that global integration can grant MNCs competitive advantage through benefits of efficient specialization and interchange among business units, especially in research and development activities.

Companies are also urged to stay locally responsive due to differences in customer needs, distribution structures and government demands across countries (Bartlett & Ghoslal, 1987; Prahald & Doz, 1987), cultural and legal differences (Lawrence & Lorsch, 1967; Paik & Sohn, 2004) and costs of coordination (Teece, 1986). Thus, taking into consideration GI-LR framework, MNCs should balance context-sensitivity and company-wide integrity of strategic decisions, based on the internal and external environment (Birkinshaw, 1996; Ghoshal & Nohria, 1989; Roth & Morrison, 1990).

A third force has been added to the GI-LR framework – the force for world-wide innovation, which puts pressure on the company to leverage dispersed innovation capabilities and to share the knowledge (Bartlett & Ghoshal, 1991). This force is of particular importance for both Roxar and Emerson, being extremely innovation and technology-focused.

As a result of the framework, four distinct types of MNCs can be identified (see Figure 6), depending on the outlook the parent company has towards its business units and the balance between global integration and global differentiation. According to Yip (2003) this is crucial in order to avoid both global strategic disadvantage and national strategic disadvantage, when a firm is respectfully either less or more globalized than the potential offered by its industry.

The strategic choice should be made examining and evaluating the forces putting pressure on the company either to integrate or to differentiate, and finding the right fit between the strategic choice and the environmental pressures, so that MNCs could build the right strategic capabilities and ensure successful performance (Bartlett & Ghoshal, 1987).

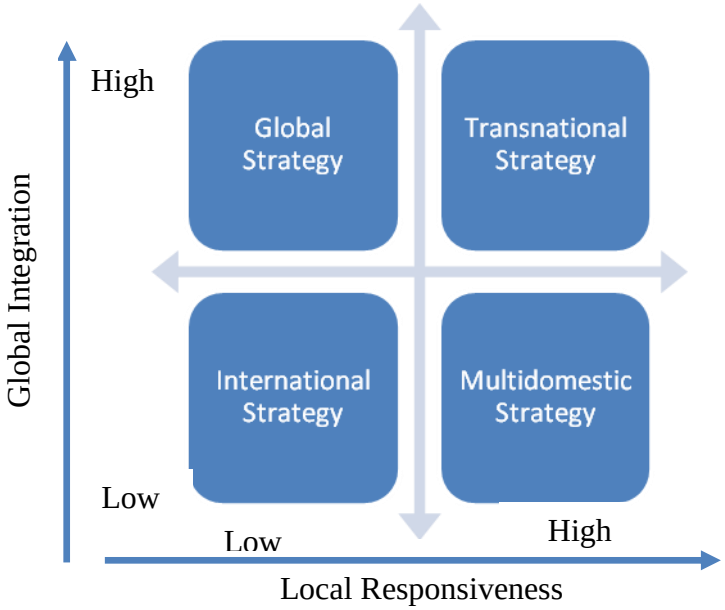

Figure 6. Four Distinct Types of MNCs (Barlett & Ghoshal, 1991).

Multidomestic strategy results in autonomous national companies containing the entire value chain, with no process of knowledge sharing between companies in place. International company pursues strategy based on the expertise of home country, with most of the value chain taking place at headquarters, management systems and innovation being developed in home country and later communicated to subsidiaries. Global strategy takes advantage of scale economies, with the full value chain being located only at home and rather weak, heavily controlled subsidiaries dependent on resources from the organization at home. Transnational companies try to maximize both integration and responsiveness, relying on knowledge being dispersed across the entire network, where each subsidiary is responsible for a specific process based on its competencies (Bartlett & Ghoshal, 1987). Researchers argue for the need for MNCs to develop transnational strategy in order to adapt to both GI-LR (Bartlett & Ghoshal, 1991).

3.1.4 Parenting Opportunities

The discussion of the external and the internal environment as well as the appropriateness of the strategy to address them provides an overview of the areas of possible improvements for Roxar. Campbell, Goold, and Alexander (1995a) suggest the following categorization of them when searching for parenting opportunities (see Figure 7):

Area	Examples
Size and age	Young business – insufficient financial resources, expertise, management skills, functional skills
Management	Insufficient quality of management, managers' focus, challenges in attracting and retaining talents
Business definition	Incorrect target market or vertical integration, unsustainable competitive advantage
Linkages	Insufficient or ineffective link to other businesses (i.e. exploitation of potential synergies, economies of scale etc.)
Common capabilities	Capabilities that could be shared with other businesses
External relations	Lack of expertise or capacity in managing relations with external stakeholders (governments, suppliers, unions etc.)
Major decisions	Lack of expertise in large projects (e.g. acquisitions, international expansion, major capacity expansion)
Major changes	Lack of experience in implementing change in particular areas
Special expertise	Lack of specialized or rare expertise
Predictable errors	Lack of openness to new alternatives, overinvestment, long product cycles, excessive diversification

Figure 7. Parenting Advantage Sources (Campbell, Goold, & Alexander, 1995a).

3.1.5 Parent's Capabilities

To understand if the parent has the ability to realize parenting opportunities, Goold, Campbell, and Alexander (1994) suggest looking at several sections of parent's characteristics (see Figure 8).

Mental maps are defined as parent's internal models and rules of thumb which are used to interpret and synthesize information. Mental maps guide parent's perception of business improvement opportunities, reflect implicit assumptions, values and objectives. Structures, systems, and processes refer to mechanisms used by parent to create value, which include the organizational chart, human resource systems, budgeting and planning processes etc. Particular attention should be drawn to understand the influences and behaviours that these processes encourage employees to follow.

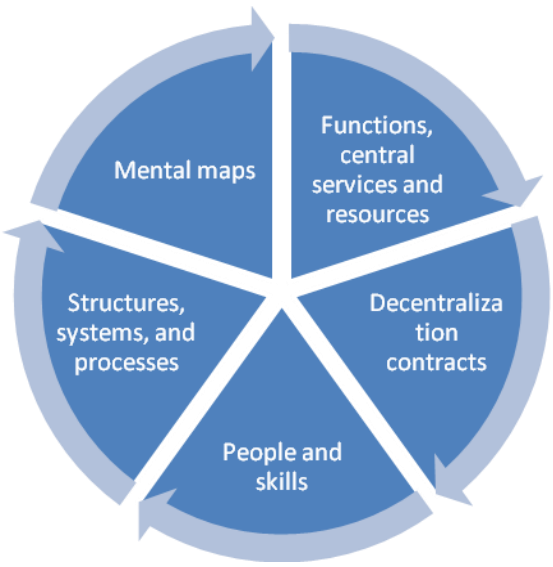

Figure 8. Characteristics of the Parent (Goold, Campbell, & Alexander, 1994).

Efforts to create value are supported by corporate staff departments and central assets, e.g. financial assets, government relationships. Another factor of value creation is parent's people with certain expertise, which may be difficult to obtain by businesses independently. Lastly, it is important to examine the existing division of processes which are centralized and which are left on businesses' own responsibility, which is called the 'decentralization contract'. It deals with parent's involvement in business processes, and often is embedded in the culture of the company (Goold, Campbell, & Alexander, 1994).

3.1.6 Fit Between the Acquired Company and the Parent

The above described analysis of the characteristics of the business and the parent, as well as of the suggested areas for parenting opportunities, would allow answering two questions:

- Does Emerson have the relevant skills, resources, management processes that fit the parenting opportunities in Roxar? Can Roxar exploit the upside potential of the acquisition?
- Is there a misfit between Emerson's characteristics and Roxar's critical success factors? What is its potential downside? (Campbell, Goold, & Alexander, 1995a)

When implementing the analysis, both strengths and weaknesses of Emerson should be analyzed, and how they fit the characteristics of Roxar and the existing parenting

opportunities. It should be argued that Emerson could perform better as Roxar's parent than other companies. Taking these into account, as well as the possible future developments both internally and externally, decisions about changes in Roxar and possible adjustments in Emerson's parenting strategy should be discussed.

When the parent and the business fit each other, the business is identified as heartland, which is characterized as having opportunities, which the parent knows how to address and having critical success factors that the parent understands (see Figure 9) (Campbell, Goold, & Alexander, 1995a).

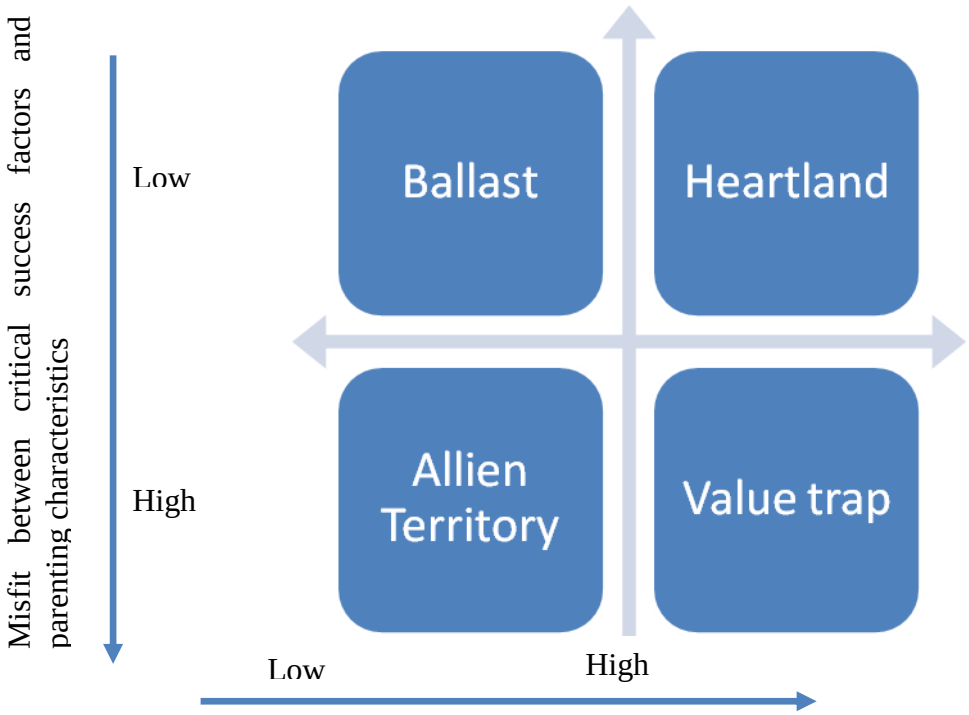

Figure 9. Parenting Fit Matrix (Campbell, Goold, & Alexander, 1995a).

If, however, any misfit is present, value will not be created, if not destroyed. Three different cases of misfit can be present: ballast, alien territory and value-trap (Campbell, Goold, & Alexander, 1995a). Ballast business is the one which has no improvement potential but fits well with the parenting approach. Such business has no potential for either to create value or to destroy it. Alien territory is the business where the parent sees lack of value creation and also lacks experience and knowledge in operating it within its portfolio. Usually, alien territory businesses would perform better under other parent. Value-trap businesses fit the parent in parenting opportunities but have a misfit in critical success factors, for instance,

due to lacking expertise (Campbell, Goold, & Alexander, 1995a). However, understanding what a source of misfit is can help develop the necessary characteristics to increase the compatibility and thus enhance value creation.

3.2 Realization of the Potential Benefits

When the parent and the business have found a fit between their characteristics, have realized parenting opportunities and have avoided the ways of value destruction, the value creation process can take place, which has four different sorts:

1. ***Stand-alone influence***: the parent influences the strategies and performance of every business under its stewardship.
2. ***Linkage influence***: the parent creates value by enhancing the linkages between business units.
3. ***Functional and services influence***: the parent provides functional leadership and cost effective services for the businesses.
4. ***Corporate development activities***: the parent creates value through development of new businesses changing the composition of its business portfolio. (Goold, Campbell, & Alexander, 1994)

Stand-alone influence refers to the parent influencing the business in management appointment, budgeting, corporate culture, strategic planning etc. Main concern of such influence is potential value destruction through inappropriate influence (e.g. setting invalid objectives, introducing unnecessary bureaucratic procedures) and excessive overhead costs. It originates in the "10% versus 100%" paradox, which exists due the parent being usually less informed and less close to the business's needs than the business's management (Goold, Campbell, & Alexander, 1994). However, the paradox can be overcome and significant value created if the parent has the appropriate skills, expertise and resources and exploits the effective processes to drive value creation.

Reinton and Foote (1988) add, that based on the fit between the needs of the businesses and parent's own competences and culture, even a well-performing businesses can be improved through the following processes:

- *Developing or improving strategy.* Management in the parent company may possess a wider experience or a greater objectivity to develop a better business strategy.
- *Motivating management to perform.* The parent company can have the skills and resources to establish more effective incentives to avoid business unit managers being comfortable with acceptable but not excellent performance results.
- *Upgrading management.* Multi-business parent is more likely to have greater resources and skills to attract more skilful personnel and to develop their talent further.

In fact, Goold, Campbell, and Alexander (1994) mention Emerson as one of the examples of successful stand-alone influence, emphasizing the great effort Emerson does to understand their businesses by gathering and processing information about the divisions, the long-term perspective of strategies developed, and the comparative homogeneity of technologies and key success factors across the business units.

Linkage influence is the way of creating value by promoting (or encouraging) cooperation and synergies between businesses under one parent (Campbell, Goold, & Alexander, 1995b). In results in enhancing value through achieving increased benefits from internal trading, sharing of skills and resources, coordination of product ranges, pooling suppliers, customers, better utilization of physical assets, databases, and intangible assets (ideas, skills, knowledge, contacts and relationships) etc. It is assumed that without parent's support , such as cross-unit task forces, staff rotation, reward and recognition systems, central policies, forums to encourage sharing, business units would not recognize the existing benefits from linkage effect. (Goold, Campbell, & Alexander, 1994)

Empirical studies have found evidence supporting that sharing of resources and activities among businesses under one parent has contributed to post-acquisition performance improvements (Brush, 1996). More importantly, the improved performance is more evident in firms which actively engage in coordination processes across the business units (Child, 1984, Crowston, 1997; Hill, Hitt, & Hoskisson, 1992, Mitzberg, 1983). Thus, effective coordination, which can be stipulated by the parent through the linkage influence, may enhance successful performance (Luke, Begun, & Pointer, 1989).

Linkage influence results in value creation in various ways: through transfer of relevant skills and resources and exploitation of synergies (Hansen & Løvås, 2004; Reinton & Foote, 1988). Here, one should mention that synergies depend on the relatedness of business units under one parent. When businesses under one parent are related, the value arises from economies of scale, economies of scope and increased market power (Jones & Hill 1988; Hill, Hitt, & Hoskisson, 1992; Porter 1987; Sigh & Montgomery, 1987; Teece 1982) which may be sharing advertising activities, manufacturing facilities and technological information. Moreover, empirical studies find that acquired firms in related acquisitions have substantially higher gains than acquired firms in unrelated acquisitions. This is usually due to more effective cooperative decisions and coordination of beneficial sharing and transfer processes (Singh & Montgomery, 1987).

Functional and service influence is a way the parent can create value for its businesses through efficient centralized functions, including finance, human resource, marketing etc, and central service, including security, catering etc. (Goold, Campbell, & Alexander, 1994). The creation of value through centralized functions and services is built through expertise and economies of scale, which allow the parent to develop scarce skills and utilize them more efficiently, through closer interaction with business units in contrast to outsourced services or through criticality of proprietary information generated by the parent. On the other hand, value can be destroyed if the parent fails to provide better services than an outside supplier, to respond to local needs or requires too much functional interference leaving no freedom to business units (Goold, Campbell, & Alexander, 1994). Overwhelming central functions can result in excessive overhead costs, delayed decision-process, and unresponsive support (Campbell, Goold, & Alexander, 1995b). Nevertheless, empirical studies have found that several functions bring more benefit when being centralized than being left in charge of every business unit; these include market intelligence (Maltz & Kohli, 1996), R&D and technological knowledge (Argyres & Silverman, 2004; Berg, 1973; Pitts, 1977).

Corporate development, which refers to activities such as acquisitions, divestments, alliances, business redefinitions and new ventures, is a different sort of value creation, however, is directly related to the case of Roxar acquisition by Emerson (Campbell, Goold, & Alexander, 1995b; Goold, Campbell, & Alexander, 1994). Concerning corporate development, value can be easily destroyed if, for instance, the parent overpays for a

business; but value can be substantially enhanced if the parent has the relevant acquisition and deal-making skills, runs the appropriate integration process, controls the business and introduces the corporate culture (Goold, Campbell, & Alexander, 1994). Another criteria for successful corporate development, and referred to Emerson as a successful example, is the systematic screening process for new acquisitions: the company has developed a certain set of heartland business criteria, ensuring the fit between the parent characteristics and the parenting opportunities, as well as the critical success factors, which increases the success rate of corporate development decisions (Goold, Campbell, & Alexander, 1994).

In addition to that, one could also look at the previous experience of the parent to acquire or develop businesses under its stewardship and their historical performance. Several empirical studies emphasize that a prior event of positive transfer results in a positive subsequent event (Cormier & Hagman, 1987; Finkelstein & Haleblian, 2002). Thus, if the company has been a successful parent for other businesses, there is high likelihood that this experience will contribute to its parenting of a newly acquired business.

Using the parenting advantage framework benefits to the analysis of the success of the particular case, enables testing whether Roxar has benefited after the acquisition by Emerson and helps identify the potential threats of value destruction.

4. Methodology

In order to find answers to the research question and perform the analysis using the previous literature findings, particular research method has to be used. This section describes the research methodology used in this thesis. Taking into consideration the research purposes, qualitative method has been identified as the most suitable to serve the exploratory nature of this research. We discuss the appropriate research methods, their limitations and present the methodology data collection process selected.

4.1 Research Approach

4.1.1 Qualitative Research

The term 'qualitative research' is a commonly used term; however, in most cases researchers define it differently. We first refer to Strauss and Corbin, who define 'qualitative research' as "any type of research that produces findings not arrived at by statistical procedures or other means of quantifications" (Strauss & Corbin, 1991, p. 10-11). Myers also emphasizes that "qualitative studies are tools used in understanding and describing the world of human experience" (Myers, 2000, p.1). This way, qualitative research enables to acquire understanding of social phenomena or processes from the perspective of respondents through in-depth descriptions of actions, meanings, beliefs (Myers, 2000). Boeije (2010) gives a summarizing definition of qualitative research:

"The purpose of qualitative research is to describe and understand social phenomena in terms of the meaning people bring to them. The research questions are studied through flexible methods enabling contact with the people involved to an extent that is necessary to grasp what is going on in the field. The methods produce rich, descriptive data that need to be interpreted through the identification and coding of themes and categories leading to findings that can contribute to theoretical knowledge and practical use". (p.11)

Main Types of Qualitative research and Data Collection Method

Qualitative research can be conducted using various methods. Myers refers to several examples: action research, ethnography, semiotics, grounded theory and case study research etc. (Myers, 2008).

The case study is aimed to explore a particular, unique case and its characteristics, through analysis of subjective data on people's thoughts, interpretation, insights and understanding of the case (Simons, 2009). Therefore, as Simons emphasizes, it is important to obtain information from various stakeholders, and interpret it considering the context (Simons, 2009).

Three types of case studies can be identified: intrinsic, instrumental, and collective (Silverman, 2010). In this thesis we employ the intrinsic case study method, as we aim to study the particularity of Roxar's performance and historical development. As Silverman states, the intrinsic case study is not aimed to generalize beyond a particular case or to build theories (2010). As this thesis is aimed at investigating the particular case of the acquisition of Roxar by Emerson and its implications for the company, intrinsic case study satisfies this purpose. Nevertheless, the case of Roxar is aimed to provide industry with some implications on how to ensure a positive impact on performance of an acquired company, and when, based on the challenges faced, a specialized firm could benefit from a diversified multinational acquirer. Thus, some generalizations, limited to tools that can be used during acquisitions, can be inferred.

The data collection methods most often used in case study research are interviews, focus groups, observations, and document analysis.

Interviews are defined as "…a form of conversation in which one person – the interviewer – restricts oneself to posing questions concerning behaviours, ideas, attitudes, and experiences with regard to social phenomena, to one or more others – the participants or interviewees – who mainly limit themselves to providing answers to these questions" (Boeije, 2010, p. 61). In comparison to other methods, interviews provide a quicker, more in-depth access to person's experience, motivations, with an opportunity of follow-up questions, and a later analysis and refection based on interview transcripts (Simons, 2009). Taking into consideration the above mentioned advantages, interviews are selected as the main data collection method.

Three main types of interviews exist: unstructured or in-depth interview, semi-structured interview, and structured interview. The interview type depends on the degree of direction of the interview contents and flow by interviewer – the more the interview is planned beforehand, the more structured it is (Boeije, 2010). The structure of the interview involves:

- questions posed,
- their formulation,
- the sequence of the questions, and
- the answering options (Boeije, 2010).

To acquire a complete understanding of the case, the interview should provide an opportunity for interviewee to provide broad answers, disclosing a wide range of details, which can't always be predetermined by the interviewer in advance. However, in order to be able to analyse the information rationally and systematically, and to compare answers from different participants, questions in the interviews should be consistent. Semi-structured interviews suit both purposes simultaneously the best: the interviewer uses a prepared list of themes and questions, but allows questions and their sequence to change depending on the particular conversation. We find semi-structured interviews to serve best our objectives to receive both detailed and comparable information. They also grant us an opportunity to adapt to the interview flow, yet still to keep control over the process, ensuring that all the intended topics are covered.

Besides interviews, document analysis, comprising of both primary and secondary data, is used to widen the available information and to obtain objective results on Roxar performance.

4.1.2 Sampling

Due to the nature of our research – exploring a particular case –probability method, which is mostly used for quantitative research, is not applicable. Thus, non-probability sampling, also called purposive, is employed. This type of sampling does not ensure a statistically representative sample; rather it helps to identify a group of people with particular characteristics, covering diverse perspectives and experiences (Boeije, 2010). This makes the criteria for selection of interviewees more important that the number of them.

Two forms of purposive sampling are identified. Theoretical sampling is designed to develop theory, which is grounded in the data; the other form is used for research, which is based on the existing social theory, and sampling is based on theoretical framework (Boeije, 2010). This thesis is aimed at exploring a particular case using the existing theory, thus, sampling of the latter form is employed.

4.2 Data Collection

4.2.1 Interview Guideline

Having selected a semi-structured interview as a method of data collection, progressive focusing was used to interpret and analyse the data. Progressive focusing can be described as a three-stage process of "making initial sense of data, reducing observational and interview data to issues, themes or areas for further exploration, and explanation" (Simons, 2009, p. 122). Following the sampling approach based on existing theory and the explanatory nature of our intrinsic case study, several initial aspects have been selected to be investigated within the study. The following themes, based on the research objectives, have been generated:

Theme I: Internal challenges of Roxar before acquisition
Theme II: Theme II: External challenges of Roxar before acquisition
Theme III: International strategy of Roxar
Theme IV: Parenting advantage of Emerson
Theme V: Changes for Roxar after acquisition
Theme VI: Changes for Emerson after acquisition

The themes have developed into the interview guideline used in the interviews. Please, refer to Appendix I for the complete interview guideline.

4.2.2 Interview Execution

10 interviews have been conducted during three days, from March 28 to March 30, 2011. The sample of the interviewees in Stavanger includes:

- Bret Shanahan, Managing Director (MD) RFM
- Hege Forus, Director Strategic Planning & Marketing Communications
- Gunnar Hviding, President and Chief Executive Officer (CEO) of Roxar (2007-2009) and MD of RFM until 2007
- Ottar Vikingstad, Director, Global Oil& Gas, Sales & Marketing
- Terje Svendsen, Vice President (VP) Operations
- Richard Graves, Chief Financial Officer
- Terje Nodland, Commercial Director
- Kjersti Heggheim, Director Human Resources

- Elin Steinsland, Director Engineering and Development
- Ingar Tyssen, VP Subsea RFM

and in Bergen:

- Kenneth Olsvik, Senior VP RFM until 2011.

The interviews were conducted personally by the authors. Interviews were held in English, in company's premises in both locations, and were scheduled beforehand. Participants were interviewed individually, answering the questions based on their own experiences and perceptions, following the interview guideline. Interviews lasted from one to two hours, were recorded and transcribed afterwards.

4.3 Limitations of the Research Methodology

The research methodology selected for this study poses several limitations for validity and generalizability of research results.

First of all, due to our interest in a particular case of Roxar the obtained results are not compared to other cases. This way we neglect the possibility of other factors, like path dependency or random factors, to have played a role in performance of the company. Therefore, the learnings from the case Roxar should be taken with consideration by other companies with a similar path. Myers emphasizes that often the small sample of cases – in our research it is a single case – makes qualitative methodology being criticized for incapability to provide generalizing conclusions (Myers, 2000). Expansion of the study to other companies could be in the scope of further research. Moreover, the company appointed the interviewees itself, thus there is a possibility of a positively biased opinions and experiences regarding the historical development of Roxar.However, let us remind the research question of this thesis, which is - How has the acquisition by Emerson affected Roxar? Thus, investigation of a single case of Roxar helps to answer the question posed for this thesis, and generalizability is, therefore, not of primary concern.

The data collected has been used to answer the research questions and sub-questions through the analysis of the case, presented in the following section.

5. Analysis

Roxar has faced an important change – it moved from being an independent company to being a part of Emerson, thus corporate-strategy decisions have partially been moved under responsibility of Emerson. Thus, it's crucial to evaluate the ability of Emerson to integrate Roxar under its umbrella and ensure that Roxar can benefit from this new structure and new strategic approach and management processes. This ability can be referred to as parenting advantage. Importantly, both internal capabilities and environmental conditions are of critical importance to consider when making the right strategic choice (Bartlett & Ghoshal, 1987).

Goold, Campbell, and Alexander (1994) argue that two important aspects should be considered when analyzing if Emerson possesses the parenting advantage to enhance the value of Roxar, which, as suggested by Barney (2011), Kogut and Zander (1992), Prahalad and Hamel (1990) and Teece, Pisano, & Shuen (1997), should result in stronger competitive advantage:

1) The reasons behind the acquisition for both Emerson and Roxar, i.e. which potential benefits for the target were expected; and
2) The ways how the parent influences the business under its control, i.e. through which processes Emerson can realize the potential benefits of the acquisition in order to improve performance of Roxar and help it address the challenges the business faced before the acquisition.

5.1 Potential Benefits

The analysis starts with addressing the first question by following the process advised by Campbell, Goold, and Alexander, (1995b): examining the critical success factors of Roxar, the areas where Roxar needed improvements, and finally – the characteristics of Emerson to identify if there is a fit between Emerson's capabilities and Roxar's opportunities and needs. We start with analyzing the external conditions in which Roxar operates.

5.1.1 Evaluating External Environment

Industry Overview

The upstream oil and gas sector often provides the most challenging environments. The solutions interpreting the extreme conditions associated with onshore and offshore applications are a must in order to optimize reservoir or well performance. This encourages fast and advanced innovations in the industry in various areas, among which flow measurement is of particular importance. Oil companies acting as operators of oil and gas fields around the world are becoming increasingly interested in subsea, topside and downhole measurement equipment and systems for the sake of production optimization, increasing oil and gas recovery and reducing operating and capital costs (Roxar, 2011a). It is used to determine the most beneficial way to develop a new field or to bring new life to a mature field. Generally, monitoring equipment provides data on the fluid composition from the well, determines erosion/corrosion concerns and reduces uncertainty in developing hydrocarbon reservoir (Olsvik, 2011).

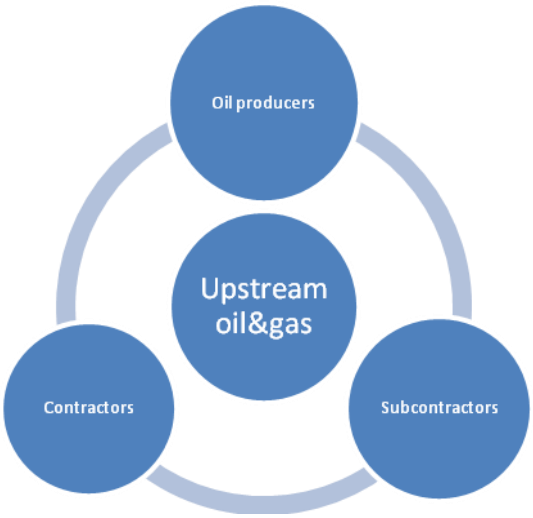

Figure 10. Players of the upstream oil and gas industry, based on Ulset (2010).

In the upstream oil and gas sector including topside and subsea instrumentations one can distinguish several players (i) oil companies acting as operators of oil production facilities around the globe (e.g. Statoil, Total S.A., ExxonMobil, BP, Shell, Chevron) buying reservoir management technology, equipment, systems and services from (ii) main contractors and system suppliers (e.g., FMC Technologies, Aker Solutions, Cameron, GE Vetco) which in

turn acquire specialized equipment, systems and services, such as reservoir/well metering and monitoring instrumentation from (iii) subcontractors, a group to which Roxar and its rivals belong (e.g., ClampOn, Multi Phase Meters AS (MPM), Framo Engineering (Framo) , Solarton, Agar) (Forus, 2011; Olsvik, 2011; Tyssen, 2011; Ulset, 2010; Vikingstad, 2011) (see Figure 10).

As a rule, contractors representing the interests of oil companies form a customer base for sub-contractors. However, much of the sales efforts are directed to oil companies which write the respective specification into the contracts awarded to main contractors. Moreover, in rare cases the equipment, especially topside instrumentation, can be sold directly to operators (Tyssen, 2011). Thereby, it is the essential part of the business to work consistently on building long-term relationships not only with contractors, but oil operators as well (Forus, 2011; Vikingstad, 2011).

Roxar's production and process instruments are in operation all over the world, in every type of reservoir helping optimize production. The portfolio consists of an extensive range of well performance measurements with Roxar today being the oil and gas industry's largest provider of subsea instrumentation (Roxar, 2008). Furthermore, the description of two Roxar's product sectors, topside and subsea, which are in the scope of this paper follows.

Topside

At the beginning of the 1990s, major R&D projects to develop the capabilities of topside metering and monitoring equipment emerged for the sake of simplifying topside facilities, and avoiding installation of separators, pumps, compressors and safety/flaring systems (PennEnergy, 2011). In a second stage, the same technologies were planned to be deployed subsea. By now, topside sector has considerably developed and due to the decreased complexity of land-based installations, standardization in manufacturing and commoditization of topside products has a huge potential (Forus, 2011; Tyssen, 2011). Thus, over the time the topside sector has been slowly transforming from the project- based to the product-based (Vikingstad, 2011). The topside sector is very competitive, well-known players in the topside sector include Framo, MPM, Agar, ClampOn and others (Forus, 2011).

Nevertheless, Roxar has gained a strong position in the topside market. Its market share in topside for particular products is close to 50% (Hviding, 2011). Roxar's extensive product range includes different types of topside meters such as multiphase, wetgas and watercut. In

addition, topside equipment contains sand, erosion, corrosion monitors and pig detectors (Roxar, 2011a). The company is relentlessly working on the development of new topside technologies and process optimization in order to suit perfectly customer needs and ensure the competitive position also in the future.

Subsea

In the oil and gas industry the term subsea relates to equipment and technologies required for the exploration, drilling and development of oil and gas fields in underwater locations. Due to the very costly exploration and production process, the initial interest in flow metering came from the offshore industry. Crucially, most of the development of subsea metering and monitoring activities have been concentrated in the North Sea, which turned out to reveal many technological challenges for production and exploration (The Telegraph, 2006). As a consequence, Norwegian companies invested a lot in building capabilities to meet these challenges and thus, have gained a valuable knowledge in the subsea technologies compared to oil and gas exploration and production service companies around the world. Despite the growing attractiveness of offshore oil and gas production and the mounting interest of global businesses in this sector, Norway has managed to maintain the leading position, for the most part because subsea technologies are very complex and require substantial time investments to be fully comprehended. Unsurprisingly, large international MNCs have started to acquire Norwegian companies in order to gain access to advanced subsea instrumentation seen as very promising and necessary equipment for upstream oil and gas activities in the 21th century (Olsvik, 2011).

At the moment, in the subsea sector Roxar faces competition from three sub-contractors established in Norway such as Framo, MPM, ClampOn and a rival from the UK - Solartron. Importantly, Framo, MPM and Roxar itself were bought by MNCs, a reflection of the emerging global interest in the subsea sector (Forus, 2011). Nevertheless, despite strengthening competition, Roxar is maintaining a strong position in the subsea market, with a market share up to 60% for some of the products (Hviding, 2011). Roxar offers a wide range of innovative and technologically advanced products including multiphase, wetgas, sand erosion, pressure & temperature, singlephase sensors and many other equipment ensuring subsea reservoir management and production optimization (Roxar, 2011a). Any requirement to repair or intervene with installed subsea equipment is normally very expensive and can result in economic failure of the subsea development (Roxar, 2011b).

Thereby, Roxar has always aimed to satisfy its clients by serving very specific requirements to be embedded in the subsea instrumentation depending on projects and particular reservoir types (Forus, 2011). Consequently, due to the need to adapt to particular customer specifications, subsea instrumentation sector is considered to be rather project-based than product-based. Standardization currently is less relevant for subsea equipment as compared to topside products. Nonetheless, one can argue that as industry evolves and subsea instrumentation develops into a more mature product, standardization opportunities will become increasingly apparent (Forus, 2011; Tyssen, 2011).

Porter's Five Forces

Having described oil and gas flow measurement industry, we proceed with Porter's Five Forces framework, which is applied in order to determine external factors influencing the economic performance of Roxar, including analysis of rivalry, substitutes, suppliers, buyers and new entry. Furthermore, this information is used for the identification of threats and opportunities which Roxar can potentially neutralize or exploit after being acquired by Emerson.

The Rivalry among Companies

The production of flow measurement equipment is a very technologically advanced process, thus only several companies around the globe produce topside and subsea metering and monitoring equipment. Importantly, the production of subsea instrumentation is concentrated in Norway, as opposed to that of topside which is based in other countries as well (Forus, 2011). Even though, the number of players in the flow measurement industry is relatively small, the competition is seen to be very intense. Rivals offer differentiated products, constantly work on building customer relationships and developing new technologies (Hviding, 2011). Significantly, product innovations are quite frequent in the industry. It is important to note that many competitors, especially those coming from Norway, have chosen to grow organically by being acquired by large MNCs for the sake of strengthening competitive position on a global scale. To illustrate, Schlumberger, one of the largest world oilfield service companies, taking majority holding of Norwegian enterprise Framo Engineering in 2009, had a significant impact on the development of flow measurement technology field (Kliewer, 2009). Having become a part of large MNC, Framo Engineering gained access to extra financing, cheaper suppliers, larger networks and could become a stronger player in the industry (Hviding, 2011). Moreover, it is important to note that main

contractors and system suppliers have started to show the interest in acquiring sub-contractors. For instance, one of the most important competitors MPM was recently bought by FMC Technologies (FMC Technologies, 2009). This backward vertical integration has given MPM an advantage over competitors in deals with one of the four main contractors - FMC Technologies and, thus has enhanced its access to potentially more oil field projects (Forus, 2011). The trend of such acquisitions in the upstream oil and gas sector significantly intensifies competition (theoretically, if all of the contractors follow this trend and develop or acquire flow measurement producers, independent players, such as Roxar, could be out of business) and highlights the importance of improved sales efforts directed both at oil companies and main contractors. In addition, rapid product development and advancements in technologies are becoming a must for maintaining and/or increasing market share globally.

The Threat of Entrants

Technological advances in flow measurement equipment create a substantial barrier for new entrants. First of all, proprietary technology in the production of subsea and topside equipment gives incumbent firms a significant cost advantage over potential entrants. The development of substitute technologies or copying the existing proprietary technology can be both very risky and costly (Hviding, 2011). Companies should test products in the laboratories, and that is a very time-consuming and expensive process (Hviding, 2011; Vikingstad, 2011). Second of all, know-how in an upstream oil and gas industry, including taken-for-granted knowledge, skills and information developed over years cannot be reproduced in the short run. This yields a sustainable competitive advantage over new players (Forus, 2011). Furthermore, incumbent companies are exploiting the advantage of favorable location. As has been mentioned before, costly exploration and production process in the North Sea spurred the initial interest in flow measurement; as a result, most of the development of subsea metering and monitoring activities is concentrated in Norway. Inevitably, existing rivalry, particularly in subsea operations, has locked up a favorable geographic location by that having ensured better access to local suppliers, raw materials and all other benefits location might grant, compared to sub-contractors in other countries (Svendsen, 2011). Besides, existing companies put a lot of time and effort to build brand awareness and create long term relationships with customers; hence, customer loyalty is a substantial factor potentially preventing new players from operations (Hviding, 2011). Overall, all the barriers mentioned above make the industry challenging to enter for a new

enterprise. Thus, unsurprisingly, in the wake of depleting oil resources and emerging extreme conditions associated with onshore and offshore applications, MNCs interested in flow measurement operations prefer to enter the industry via acquisitions rather than making green-field investments or internal development.

The Threat of Substitutes

Due to the fact that Roxar and its rivals are frequent product innovators and enormous efforts are put into the development of premium technologies in upstream oil and gas metering and monitoring instrumentation, the threat of substitutes is not clearly emphasized (Olsvik, 2011). The industry is very conservative, thus when oil field operators have got used to flow measurement instrumentation, they are reluctant to quickly switch to alternative solutions, bearing in mind associated costs and complexity of equipment installation, maintenance and exploitation (Forus, 2011). In fact, it should be noted that Roxar's and its competitors' products are substitutes themselves for outdated technologies in the upstream oil and gas sector. For instance, multi-phase meters are able to serve the same needs as test separators, which were mainly used in the past for the purpose of detailed flow measurement, but do it more efficiently in terms of both time and money (Olsvik, 2011). It can be concluded that continuous investment in the development of flow measurement technologies and close collaboration with customers act as a primary protection against emerging substitutes.

The Bargaining Power of Suppliers

For the most part, suppliers in the flow measurement sector are considered to be powerful (Svendsen, 2011). Due to the advances in technology and assembly operations, for many flow measurement production components there is only single source supplier. Not surprisingly, Roxar and its competitors often experience difficulties in finding alternative suppliers would it be raw materials, production equipment, or labour (Svendsen, 2011). Importantly, even though some suppliers are dispersed around the globe, the majority of them are concentrated in Norway: being at the heart of North Sea oil and gas exploration and production activities they have managed to develop a unique competence compared to their counterparts abroad.

In addition, it is important to note that main contractors and/or oil operators sometimes provide specifications on purchasing from particular suppliers for the sake of high quality assurance (Svendsen, 2011). Taking the above mentioned into account, it is clearly seen that

there is not much flexibility in the choice of suppliers, thereby, it has always been crucial for sub-contractors to build long-term relationships with suppliers in order to ensure lower prices, flexibility in procurement and avoid delays in delivery (Hviding, 2011).

The Bargaining Power of Buyers

As has been mentioned before, main contractors and system suppliers, such as FMC Technologies, Aker Solutions, Cameroon and GE Vetco form a customer base for sub-contractors. On behalf of and often based on the specifications provided by oil field operators main contactors are acquiring specialized equipment, systems and services, including flow measurement instrumentation for various oil and gas exploration and production projects around the globe. Taking into account that much of the sales efforts should be directed at oil companies which write the respective specifications into the contracts awarded to main contractors, undoubtedly, operators of oil fields should be treated as buyers as well (Vikingstad, 2011). Thereby, although in the majority of cases main contractors are directly closing deals with sub-contractors, one should distinguish between two types of influential buyers 1) main contractors and 2) oil companies. Because of the relatively small number of both main contactors and oil companies, the power of buyers in the industry is obvious. In order to sign a letter of intent with a main contractor, not only the sub-contractor should be ready to offer the best price in the interests of system operator, but also its products should be customized to perfectly match the needs of particular oil fields for the sake of meeting specifications by oil companies (Tyssen, 2011). Crucially, for some projects it took Roxar six years from the first contact with the client to actually getting the order (Vikingstad, 2011). Altogether high bargaining power of buyers makes it difficult to maintain high levels of profitability in the industry. Moreover, the recent backward vertical integration of MPM and FMC Technologies and potentially rising interest of main contractors in acquiring sub-contractors may pose an increasing threat of buyers and result in main contractors capturing some of the economic profit.

All in all it can be concluded that Roxar faces myriad external challenges (see Figure 11). To start with, intense rivalry in the flow measurement industry is expressing itself in different forms, including price competition, regular service improvements and frequent product innovations, which inevitably limit the profitability of industry. At the same time, powerful suppliers possessing scare resources can exercise a strong negotiation power, thereby, significantly affecting operations of sub-contractors. In the same vein, powerful buyers, both

oil companies and main contractors capture more economic value by forcing down prices and simultaneously demanding better quality or improved service, thus driving up costs at the expense of industry profit.

External Forces	Description
Rivalry	Intense rivalry expressed in price competition, regular service improvements and frequent product innovations
Suppliers	Powerful suppliers, exercising a strong negotiation power in terms of prices, quantities and deliveries
Buyers	Powerful buyers, constantly driving prices down and simultaneously demanding better quality There is a threat of backward vertical integrations
The new entry	Substantial capital requirements, proprietary technology, know-how and favourable geographic location prevent new players from the entry
Substitutes	The threat of substitutes is not emphasized

Figure 11. External challenges and opportunities, based on Porter (1996).

Nevertheless, external opportunities can also be spotted (see Figure 11). First of all, substantial capital requirements, proprietary technology, know-how and favourable geographic location prevent new players from entering the oil and gas metering and monitoring instrumentation sector. Moreover, due to the technology advancements the threat of substitutes is not significant as well. As a result, by making continuous investment in the development of flow measurement technologies and working closely with global customers Roxar can improve its competitive position on a global scale without threatening new competition.

Industry Globalization

In the perspective of industry globalization, industry globalization factors, including cost drivers, market drivers, competitive drivers, and government drivers (Yip, 2003), are considered. This enables to evaluate the potential of flow measurement industry to be globalized.

One of the main **cost drivers** refers to global economies of scale and scope, the former implying the gains from increased volume of an activity and the latter – the gains from

spreading activities across multiple product lines or businesses (Yip, 2003). Utilizing economies of scale and scope protects incumbents from the threat of potential competitors entering the market (Yip, 2003). As far as Roxar concerns, the company faced difficulties with utilizing this cost driver. First of all, the company historically had activities spread across Norway; yet, the consolidation was acknowledged as necessary and was started, which would help Roxar to stay cost-competitive (Hviding, 2011). In terms of exploitation of economies of scale, the potential was limited due to the industry specifics of selling few big products rather than many small ones. Nevertheless, the opportunity to consolidate activities and to standardize some of the products, especially topside, could help Roxar to accelerate the accumulation of learning and experience effects, as argued by Yip (2003). Economies of scope were developed to a limited extent: for example, Roxar did utilize the same product branding benefits, yet due to disperse location, common technology platforms were not used. Global sourcing efficiencies are also referred to as a cost driver, as centralized purchasing results in cost savings of production inputs. However, it is important to remember that upstream, oil and gas industry is very demanding in terms of particular quality and suitability of components. Because of that, most of Roxar's existing and potential suppliers are located mainly in Norway and UK (Svendsen, 2011). Therefore, the potential of global sourcing benefits is limited even though Roxar has performed purchasing centrally in Norway. Another cost driver is differences in country costs, which can be utilized by concentrating activities in low-cost or high-skill countries (Yip, 2003). Most of the activities were taking place in Norway; moreover, Roxar was running several facilities across the country, which was leading to high production costs. No doubt, Norway, where the technology was developed and where people with the appropriate skills and high productivity are located, is the right place for engineering and development, yet production in Norway encounters high costs, which could be avoided. Relocation of some activities to cheaper countries could be a way to save costs (Olsvik, 2011). However, a balance between reduction of costs and danger of knowledge leak should be considered (Yip, 2003). If relocation of activities takes place, favourable logistics could be another source of cost savings. Yip (2003) suggests that production can be concentrated in a distant location from customers when sales to transportation costs ratio is favourable, which is often driven by long or flexible delivery time or non-perishable nature of products. As Roxar produces few big projects, it's more convenient to concentrate production and later transport the products to the delivery place. However, as stated by Hviding, the company had already faced problems with late deliveries, which was the major cause of dissatisfaction among clients

(2011). On the other hand, Roxar's sophisticated production is tightly linked to engineering, thus it could be argued that production should be located in the same place as engineering and R&D. Moreover, some customers express willingness to visit the production facilities to check the quality of the final products themselves, and if production is located in countries far away (e.g. China in order to cut production costs severely) clients would be deprived of such opportunity and the company would be exposed to the threat of mistrust (Hviding, 2011). Another globalization factor related to costs is high product development costs, which suggests that the company should go global in order to spread the costs across a larger production volume (Yip, 2003). This is present in Roxar's situation as the company produces highly innovative technology and in order to sustain competitiveness the company has to sell globally. Roxar's strategy in serving international customers evolved by following their orders outside Norway, which resulted, as has been mentioned, in a network of regional offices, establishing presence in 19 countries. Therefore, sales potential of the company is based on serving truly international markets. A similar argument concerns the fact that Roxar produces fast-changing technology - as Hviding stated, Roxar operates in the industry which experiences technology race - , which requires the company to invest heavily in innovation and thus to encounter high costs (2011). In order to address these costs the company should rapidly globalize its products in order to gain the market share across the globe.

The other group of industry globalization factors is **market drivers**. The primary driver of globalization originating from market needs is the similarities in customer needs across the world, which are usually based on economic development, similarities in climate and physical environment infrastructure (Yip, 2003). Moreover, this driver accelerates the use of global strategy levers and makes it easier to serve many markets with few products. Taking into account the specifics of the industry, it can be concluded that Roxar's customers are very demanding for particular specifications of the products, which results in customization of most of the products (Hviding, 2011). And if topside products could be standardised, subsea technology is very much dependent on the characteristics of particular reservoir where it is later installed and has to address its physical conditions, thus no major standardization could be in place. However, the latest trends in the industry prove that firms are constantly searching for technology advancement which could minimize customization, thus potential of larger degree of standardization is expected. Another factor which makes standardization difficult is that although Roxar serves end-customers which are global in their nature – oil companies operate internationally - , the company has to work with

separate project teams, which usually require different product specifications (Tyssen, 2011). This complicates internationalization of Roxar, requiring a lot of customized sales and engineering. On the other hand, Roxar works with contractors (mainly, FMC Technologies, Aker Solutions, Cameroon and GE Vetco) on a centralized and coordinated basis, thus it can be argued that the industry is based on global channels, which requires the company to have an extensive network of company representatives across the world to be able to address both contractors and end-users. Roxar, however, is limited in this respect, even with presence in 19 countries: if the company had larger sales people capacity, the potential of reaching more customers could be higher.

Transferable marketing is another market driver for globalization. Upstream segment in oil and gas industry can be considered appropriate for transferable marketing and requires no need for locally adapted brand name or advertising. Moreover, Roxar has already established a global brand, which enables the company to save on adapting marketing to particular markets. Yet, the specific sales approach – extensive communication with local project teams in oil and gas companies responsible for a particular project - requires a lot of input in establishing customer relationships which cannot be easily copied across countries. Apart from that, the industry can be characterized by a strong lead-country effect: Norway is the place where the subsea technology has been developed, where most of the innovation takes place currently, and where most of the Roxar's competitors operate as well (Oslvik, 2011). That is why, being founded in Norway and concentrating the innovation and engineering activities here, has certain advantages, as it has already been stated when analyzing the industry forces. Norway as the country-of-origin also helps Roxar to prove its product quality, which can be used in sales process. However, staying focused on one country only could be dangerous for company's growth. According to Shanahan, Roxar initially focused on few areas: Europe for its subsea business and Norway and Russia – for downhole (2011). This coupled with limited sales force around the world can endanger company's market share, especially in the long-term.

Yip (2003) identifies **competitive drivers** as another group of industry globalization factors. First, it is important to acknowledge that oil and gas sector is truly international with final and intermediate products being traded intensively between countries. By addressing this industry characteristic, Roxar is forced to operate globally. Looking at the rivalry side of the industry, Roxar is exposed to globalized competitors, yet many of them originate from

Norway (Forus, 2011). To be able to withstand international competitors, Roxar has to operate internationally as well, which also gives the company strength to endure potential attacks of global rivals. Another competitive driver concerns transferability of competitive advantage, which in case of Roxar is mainly based on technology. In regards to this, it is important to emphasize that Roxar's expertise originated in Norway and, taking into account the concentration of technology development and innovation in Norway, the suitable skills are possessed by people in Norway. It would not be plausible, or appropriate either, to dislocate or duplicate technology part of Roxar's value chain.

The last group of industry factors refers to **government drivers**. Roxar is not exposed to any strong barriers placed by governments, apart from few, e.g. restrictions on local content posed in West Africa (Svendsen, 2011). Some other countries, like BRIC, are usually also posing local content requirements, thus having subsidiaries (offices) abroad can help Roxar to fulfil such restrictions. Mostly, the company faces favourable trade policies, compatible technical standards and common marketing regulations, which, according to Yip (2003), promote globalization.

The cost drivers signalize that the industry, where competitive advantage should be based on technology offered at competitive prices (Hviding, 2011), pushes Roxar to operate globally in order to achieve cost savings, yet the decision should be balanced with the threat of information leakage and the specifics of the industry, involving the need of customized products and the limited pool of suppliers. In respect to market drivers, Roxar is advantageously positioned in the market: its strong link to Norway – as a centre of technology and innovation – provides good proximity to demanding customers and competitors, which complemented with the company's global brand and opportunity to standardize some of its products, provides great benefits of globalization. Nevertheless, the industry requirements for intensive customization and establishment of relationships with end clients, as well as Roxar's limited existing sales channels, put certain barriers to globalization. Based on the competitive drivers, Roxar has to balance the necessity to reach its customers globally with the need of being located in Norway to stay innovation and technology-focused. As far as government drivers are concerned, Roxar faces no major barriers to globalization.

Further on we proceed with the analysis of the internal environment of Roxar in order to identify company's strengths and weaknesses before the acquisition.

5.1.2 Evaluating Internal Environment

The analysis of internal environment is performed to determine Roxar's strengths and weaknesses which resulted in or prevented the company from gaining sustainable competitive advantages before the acquisition. Moreover, the internal evaluation helps understand whether the company independently was able to respond to the challenges and opportunities generated by the external environment. A Resource-based view by Barney, Value Chain model by Porter and Global Strategy Levers and Organizational Factors by Yip are used in the analysis.

Resource-based View

Resource-based view is applied in order to comprehend which R&C resulted in Roxar's competitive advantages before the acquisition and whether they were sufficient to gain and sustain the leading competitive position in the flow measurement sector on a global scale. According to Peng, R&C developed by companies can be divided into (i) tangible and (ii) intangible R&C (2006). Next, we proceed with the evaluation of two types of R&C possessed by Roxar.

Tangible R&C

A set of tangible R&C in Roxar before the acquisition included financial, physical, technological and organizational factors. Below we look at each category separately.

Financial

Innovation and permanent product/service improvements had always been factors that set Roxar apart from competition (Forus, 2011). Since its early operations the company aimed to operate world-class manufacturing facilities, provide the best customer service and be a world's leading producer of flow measurement instrumentation, which in turn required a substantial financing. Moreover, Roxar had always been committed to dedicate considerable investments for developing superior instrumentation solutions of the future (Hviding, 2011). Certainly, financial capital had persistently been one of core stones for the successful development of Roxar's business.

Throughout its operations Roxar has changed ownership several times, thus the company has applied different methods of financing since the establishment (Nødland, 2011). To start

with, the enterprise was twice listed at OSE, when operations were financed via funds paid by investors for the newly-issued shares. Furthermore, after being acquired by both Lime Rock Partners and Arcapita, Roxar was delisted and financing came from private investors. Importantly, whilst being interested in making fast profits, previous investors of Roxar were rather strict and sceptical in terms of long-term investments (Tyssen, 2011) (Hviding, 2011; Nødland, 2011). Not surprisingly, external pressure for constant innovation and substantial expenses of technologically advanced assembly processes were pushing company to get bank financing in order to maintain and augment its market share globally. However, despite Roxar's good reputation, in the wake of the financial meltdown the company faced significant challenges of getting bank financing for its further operations (Nødland, 2011). To illustrate, before the acquisition Roxar's debt amounted to 212 million USD (Reed Business Information Australia Ltd., 2009). During the economic recession and resultant stricter loan regulations imposed by banks, the debt burden together with declining global economic output posed a threat on company's future development (Hviding, 2011). Taking the above mentioned into account, it is clear that before the acquisition costly operations and necessary investments in new technologies made it challenging for Roxar to finance its global business development properly, particularly in the hard economic times.

Physical

Physical resources possessed by Roxar include firm's plants, production machinery, buildings and last, but not least, favourable geographic location.

Before the acquisition, Roxar operated four factories which were located in Norway, with assemblies in Bergen, Stavanger, Trondheim and Oslo (Svendsen, 2011). Crucially, Roxar has always aimed at attracting best minds to operate its plants. Moreover, the company had constantly been looking and working on building reliable relationships with the best suppliers of production factors available in the industry. Bearing in mind the quality concerns associated with the flow measurement instrumentation, Roxar was inviting its clients to come to Norway and check out manufacturing facilities on their own, by that demonstrating its commitment to high safety and quality standards, in addition to full transparency of operations (Svendsen, 2011). In consequence, throughout its operations Roxar had managed to create a reputation of being a trustworthy manufacturer running world-class assembly facilities, which created a sustainable competitive advantage for the company (Hviding, 2011).

In addition, one of the important physical assets of Roxar had always been favourable geographic location. As most of the developments of subsea metering and monitoring activities were initially concentrated in Norway, local companies involved in the production of flow measurement instrumentation, including Roxar, had locked up a favorable geographic location. This had ensured a better access to high-quality local suppliers of both raw materials and production machinery compared to competitors in other countries (Svendsen, 2011). Nevertheless, geographic location did not give Roxar a competitive advantage over its domestic rivalry, since local firms, such as ClampOn, MPM and others had an access to the similar local supplies. Moreover, Norway did not possess comparative advantage over other countries in terms of prices of raw materials, thus negatively impacting the procurement expenditure of Roxar.

Technological

Technological advancements in production and large investments in product and process upgrades were always crucial for Roxar's business development (Forus, 2011). Since the establishment, the company was aimed to convert its technological resources into fully commercial products with the speed difficult to outcompete (Roxar, 2011a). By the end of 2008, Roxar prided itself on its innovative culture with 60 patents and more than 50 scientists employed to focus on life-of-product improvements, as well as the development of new solutions (Roxar, 2008). Moreover, the company possessed several trademarks and technology rights, including trade secrets, distinguishing Roxar's products and services from those of other enterprises. Clearly, technological resources of Roxar for a long time resulted in competitive advantages. Nevertheless, due to the willingness of previous Roxar owners to earn quick money without investing sufficient amount of financial funds, some of Roxar's products were lagging behind those of competitors in the wake of financial crisis (Forus, 2011; Tyssen, 2011; Vikingstad, 2011).

Moreover, it is crucial to emphasize that the protection of IP has always been of high importance for the company (Hviding, 2011). Importantly, even though Roxar had put enormous efforts to protect its IP, the company experienced problems with technology leakage in cases when its employees were leaving and establishing their own enterprises. To illustrate, formerly Roxar initiated the lawsuit against FlowSys AS regarding unlawful usage of trade secrets relating to Roxar's industry-leading multiphase flow meter technology (Bnet, 2005). After the second appeal, The Appeal Committee of the Supreme Court of Norway

supported the ruling ordering FlowSys to be refrained from producing, selling or marketing its multiphase flow meters for a period of three years. As a result, Roxar sent a clear message both to its employees and rivalry that IP should be respected (Hviding, 2011).

Organizational

Before the acquisition by Emerson, Roxar was structured in a way to allow each business unit to have defined responsibilities and decision-making authority. This autonomy provided each individual employee with the opportunity to make a difference and personally contribute to the development of Roxar (Roxar, 2008). The organization was built around the flexibility and timely responsiveness, purposely avoiding the introduction of bureaucratic procedures (Forus, 2011). Whenever the problem occurred, it could be efficiently solved without the involvement of extra resources (Heggheim, 2011). There were no strict guidelines dictating employees whom they were allowed to contact and describing in detail how particular problems could be solved. Importantly, no guidelines prevented Roxar's employees from approaching top management whenever it was deemed necessary. In an industry, where one should react quickly to get the project, these organizational capabilities allowed the company to catch up with the market trends and be extremely responsive to changes in external environment (Forus, 2011).

Yet, sometimes the lack of formal coordination systems resulted in inefficiencies. To illustrate, highly autonomous business units were often behaving in an opportunistic and entrepreneurial manner, in other words they frequently were interested in the accomplishment of goals bringing direct benefits to their own unit rather than the whole business (Olsvik, 2011). This separation led to several barriers in communication and overall cooperation between Roxar's employees working in different business units and/or different locations.

All in all, it can be concluded that Roxar had possessed valuable organization capabilities allowing it to be fast and flexible in decision-making. However, as the company started to grow and expand globally, it was unfeasible to implement direct control of all employees and ensure that every business unit is working in the corporate interests of Roxar, consequently the lack of formal organizational procedures led to some inefficiency in the company.

Intangible R&C

Intangible R&C which are more difficult to imitate, and thus can be a stronger basis for competitive advantage (Barney, 2011), were also present in Roxar's portfolio of competencies before the acquisition. Below each category of intangible R&C is discussed.

Human

Roxar was always proud of its human resources and treated them as one of the main driving forces of the company's success (Forus, 2011). Personnel dedication, sense of personal achievement and trust within the company were critical to Roxar's business since the beginning of operations (Heggheim, 2011). All interactions within and outside the company were build according to the concept of "PRIDE", describing Roxar's employees as Professional, Respectful, Innovative, Determined and Enabling. The concept of 'PRIDE' reflected Roxar's feelings about the importance of its people, and the attitude Roxar's people towards their work (Roxar, 2007).

Since the establishment, Roxar had put a lot of efforts for the sake of recruiting talented people which came from various backgrounds such as geosciences, geology, software programming, engineering, industrial design, petrophysics and chemistry (Roxar, 2008). Moreover, the company aimed at developing its employees both professionally and personally, providing growth opportunities and the best working environment for working staff at all levels and in all the countries the company was operating in (Heggheim, 2011). Crucially, Roxar's employees were flexible in terms of their performance and had always been welcome to make suggestions about the future development of the company, as no limitations on the tasks of employees were put by Roxar management (Forus, 2011). As a result, often Roxar's development had hinged on the passionate dedication of individual employees, who had made a difference by taking personal responsibility (Roxar, 2008). Bearing in mind that flow measurement market employees form a recruitment platform for oil companies (Hviding, 2011), the respectful and careful attitude towards its employees had helped Roxar to create the unique attitude and behaviour of its staff that resulted in a difficult to imitate special asset for the company (Heggheim, 2011).

Nevertheless, it is crucial to note that entrepreneurial and opportunistic behaviour embedded in the company's culture, had resulted in some unprofessional cases, when employees were leaving and establishing their own business without respecting IP rights of Roxar.

Importantly, this was a serious internal challenge the company was facing and because of having insufficient experience in IP protection field in the beginning of operations, the company had several times failed to protect its technologies (Hviding, 2011).

Innovation

Roxar's business model had always been built around innovation (Forus, 2011). In order to maintain its position as market leader, it had been important for Roxar to keep constantly investing in improving its existing products and to carry out R&D of new products. As noted previously, already in 2008 more than 50 Roxar's employees were dedicated to R&D. To demonstrate, in 2007 65% of sales came from products not commercially available before 2007, which is an impressive indicator for an industry well-known for being conservative (Roxar, 2008).

Significantly, the innovation was embedded in Roxar's culture, every employee of the company could come up with an innovative idea and, if seen as feasible by management, the development of it would start without delay (Forus, 2011). To illustrate, in 2008 Roxar capitalized around USD 9 million related to technology development activities (Roxar 2008). Moreover, in the same year around USD 20 million were expensed as R&D costs associated with upgrading the existing products. Overall, throughout its operations Roxar has always allocated a substantial proportion of its operating revenues to R&D activities. Thus, Roxar's relentless devotion to R&D activities resulted in a competitive advantage.

Nonetheless, as mentioned before, previous owners of Roxar had a rather short-term perspective of the business development; thereby one can argue that insufficient investments were made in people and technologies. This resulted in some of company's products lagging behind those of competitors in the wake of financial crisis (Forus, 2011; Tyssen, 2011; Vikingstad, 2011).

Reputation

Roxar had always had a reputation in the marketplace for its 'can do' attitude, world-class manufacturing facilities, service responsiveness and its ability to innovate (Roxar, 2007). Crucially, the company had constantly aimed at enhancing and building long-term relationships with its stakeholders, would it be customers, suppliers or employees. To illustrate, top management was readily available to discuss all the details of projects with customers whenever required. Without saving resources, ex-CEO of Roxar Gunnar Hviding

was flying to any destination to personally lead negotiations and explain to potential clients all the advantages of Roxar's products (Hviding, 2011). Moreover, Roxar people were persistently putting considerable efforts to improve collaboration with suppliers and to make it mutually beneficial (Svendsen, 2011). In addition, as noted previously, Roxar had always respected and treated its employees as one of the main driving forces of the company's success. Taking the above mentioned into account, it can be concluded that all over its operations, the company had managed to build a trustworthy reputation of being not only a superior product and service provider, but also a reliable partner and good employer. Certainly, Roxar's trustworthy reputation created a competitive advantage for the company, which could not be easily reproduced by rivals.

To conclude, over the years of operations Roxar had managed to develop valuable, rare, costly to imitate R&C related to technology advancements, unique human capital, innovation capabilities and trustworthy reputation which clearly resulted in competitive advantages and set the company apart the competition on a global scale. Furthermore, physical resources, including world-class manufacturing facilities in a geographically favourable location also provided the company with productivity advantage over its global rivalry.

Nonetheless, as Roxar started to grow the company faced difficulties to support and develop its global business operations, including R&D activities, via existing financial resources and organizational capabilities. One can argue that difficulties in finding financing for investments in the times of economic downturn and lack of formal control systems in the times of rapid growth undermined Roxar's ability to respond effectively to external challenges and exploit opportunities to the fullest degree.

To summarize, all Roxar's R&C before the acquisition have been assigned a particular colour in accordance to their ability to form a competitive advantage: green being the most strongest, orange – less strong and red – weak (see Figure 12). This information is crucial for the forthcoming analysis of Roxar's value chain, which aims at determining whether the company possessed enough R&C to be good at all its support and primary activities of value chain.

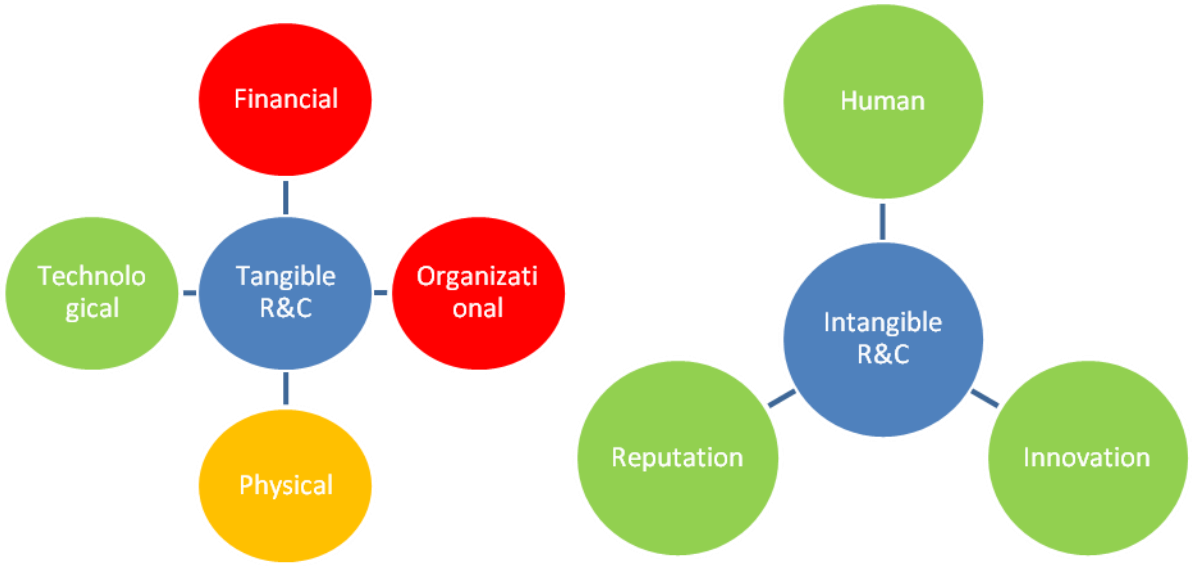

Figure 12. R&C of Roxar before the acquisition, based on Peng (2006).

Value Chain

In the previous analysis it has been determined that Roxar possessed several R&C which led to competitive advantages before the acquisition. Next, value chain analysis is performed to identify whether Roxar was able to perform its value chain activities in a manner superior to its competitors, thus resulting in each activity adding value. In other words, it is crucial to determine if given existing R&C Roxar was focusing only on those aspects of its operations which it was strong in.

As a rule, value chain activities are split in two main activities: primary and support (Porter, 1996). Next, we analyze primary and support activities of Roxar separately.

Primary Activities

According to Porter, primary activities of value chain include purchasing, production, outbound logistics, sales and marketing and after-sales service (1996). Below the analysis of each activity is provided in order to identify which primary activities Roxar was strong in before the acquisition.

Roxar had managed to gain at least temporary competitive advantage in **purchasing** or inbound logistics. As noted previously, the company had always aimed at developing long-term relationships with suppliers of production factors from different countries. Thus, by having created a reputation of a trustworthy business partner, Roxar had obtained an access

to price reductions and flexibility to place urgent orders for many supplies it purchased. However, although this advantage was a valuable asset, it was neither rare nor costly to imitate at least in the long run. Moreover, despite having a close relationship with suppliers, the company had problems with late deliveries of supplies, which in turn often resulted in late product deliveries. Importantly, in order to overcome this problem, Roxar decided to shift high costs of having an inventory of supplies from suppliers to itself (Hviding, 2011; Svendsen, 2011). As a result, in cases of urgent production requests having an inventory on hand was beneficial to the company and helped to decrease the number of late deliveries to some extent. However, it is crucial to stress that the costly storage of supplies had been resulting in the substantial expenditure for the company.

Roxar's **assembly operations** had always been a source of a competitive advantage as well. The valuable human resources, in other words professionalism and productivity of Roxar's engineers, their attention to details, efficiency, had been built into high-quality Roxar assembly operations since the establishment (Roxar, 2008). Moreover, the company was acquiring solely first-class production factors, including production equipment and raw materials, which all together resulted in Roxar's reputation of being a trustworthy manufacturer running world-class assembly facilities (Svendsen, 2011). In addition, scarce and valuable technological resources of Roxar had resulted in many intellectual rights on assembly operations, which inevitably led to the sustainable competitive advantage for the company. Nevertheless, it is crucial to consider that instead of being concentrated in one place or located in countries with comparative advantage (i.e. a location with the access to the cheapest pool of raw materials or people), as suggested by Porter (1998), Roxar's plants were dispersed throughout Norway, which despite of the productivity advantage, led to relatively high running expenses, in terms of both fixed and variable costs (Olsvik, 2011). This in turn resulted in relatively expensive prices for Roxar's products in comparison to those of competitors (Vikingstad, 2011). According to Roxar management team, the main purposes of having factories in four Norwegian cities were human resource and reputation factors (Hviding, 2011; Olsvik, 2011). First of all, Roxar didn't want to sacrifice its best minds by moving production to other places. On one hand, the risk of headhunting had always been high in the upstream oil and gas industry (Hviding, 2011). On the other hand, many Norwegian employees were reluctant to alter their location and rather preferred to change their working place than residence (Olsvik, 2011). Second of all, having assembly operations in Norway granted a high-quality guarantee of Roxar products in the eyes of

buyers, compared to e.g. operations in China (Svendsen, 2011). Yet, although there had been serious reasons for having dispersed location of assembly operations, it can be concluded that Roxar lacked optimization of its physical resources for the sake of cost cutting.

Due to the fact that Roxar had always been considered as a project-based company, the company was not performing **warehousing and distribution** value chain activities. After the completion of manufacturing order, flow measurement equipment, either topside or subsea, was directly delivered to the client. However, one can argue that the company was not exploiting alternative distribution opportunities for its topside equipment. As noted previously, as compared to subsea flow measurement products, due to the decreased complexity of land-based installations, topside equipment can be standardized. Thus, it is possible to conclude that by transforming topside sector from project- to product-based (e.g. selling topside products in catalogues) Roxar could develop it more efficiently, importantly, both in terms of cutting manufacturing costs and targeting more global customers.

Sales and marketing activities at Roxar were managed at an international level. Although, before the acquisition manufacturing operations and technology development were taking place solely in Norway, Roxar operated and conducted sales in more than 19 countries (Roxar, 2008). The company operated four world area divisions or hubs in Kuala Lumpur, Dubai, Houston and Moscow. Hubs were be treated as self-sufficient administrative units permanently employing sales people amongst others, who were putting a lot of efforts and adapting to local environments in order to gain new projects. Moreover, Roxar established several regional offices in such countries as Brazil, Australia and UK amongst many others and hired country managers in countries like China and India in order to develop Roxar's business globally. Importantly, Roxar sales people located in hubs and regional offices were covering not only the country they were operating in, but also nearby countries. Roxar's team had always aimed to be locally responsive and have personal approach to each and every client, including both main contractors and oil field operators. It is important to note that although project negotiations were always initially led by country managers, regional directors or area vice presidents, Roxar's ex-CEO Gunnar Hviding was readily available to fly whenever needed and to continue negotiations personally, by that emphasizing the importance of every client. High-level of respect towards clients and willingness to serve their particular needs adapted to local environment indeed resulted in a competitive advantage for the company.

Nevertheless, according to Roxar's management the lack of truly global presence was an important barrier slowing the global business development of the company before the acquisition (Hviding, 2011). Roxar had always provided its employees with the first- class offices. On top of that, due to the lack of market intelligence systems, the company used to grant its globally dispersed employees with remuneration and welfare benefits above the ones widespread in the countries of operations (Heggheim, 2011). Inevitably, operating offices in more than 19 countries incurred considerable expenditure for Roxar, thereby, because of the limited financial resources the company could not afford to have offices in all strategically important locations. Often Roxar sales people found it difficult to efficiently cover many countries and have personal approach to clients in various areas at the same time, which lead to lost business opportunities. Moreover, as a result of the failure of company's organizational capabilities to adjust to the fast growth of the company, international sales and marketing activities of Roxar were not integrated (Svendsen, 2011). There was lack of both formal and informal communication and coordination between sales and marketing people from different regional hubs and offices. Although, the communication existed between HQ and international divisions, in general, Roxar's representatives abroad were not collaborating, thus the process of knowledge sharing and learning was not taking place (Hviding, 2011; Svendsen, 2011). At the same time, according to Porter, cooperation involving information exchange between divisions or subsidiaries located in different countries is necessary for enhancing operational effectiveness through transfer of valuable knowledge (1998).

Roxar had always been strong at proving **after-sales service** for its clients (Roxar, 2011b). Since the beginning of operations, all Roxar products were backed up by expert service organization throughout the product life cycle. High quality after-sales service offerings included ongoing maintenance, data collection, analysis and last, but not least, decommissioning. Depending on the region and the issue concerned, service people were either available locally or special team of engineers from Norway was flying to any destination requested (Forus, 2011). Importantly, service field engineers located in regional hubs or offices were serving various projects, which prevented the necessity to hold an engineer in every country Roxar was having a project in. In addition, it is crucial to emphasize that at all times Roxar had been focused on preventative support in order to predict equipment failure, rather than waiting for emergency call-outs. Moreover, in cases of remote locations both land and sea, Roxar's remote technical support was readily available

24/7 (Roxar, 2011b). Clearly, throughout its operations Roxar had proven that the company was a world-class provider of after-sales customer services, which undoubtedly resulted in a competitive advantage for the company.

Support Activities

Support activities of value chain cover firm infrastructure, human resource management (HRM) and technology development (Porter, 1996). The analysis of Roxar's value chain support activities is performed below in order to determine whether Roxar was focusing only on those aspects of its support operations in which it had gained either temporary or sustainable competitive advantage.

As has been noted before, despite the growing size of the company before the acquisition Roxar was structured in a way to allow each business unit to have decision-making authority (Hviding, 2011). Thereby, one can argue that **firm infrastructure** was not clearly defined. The organization was built around the flexibility and timely responsiveness, purposely avoiding the introduction of strict and binding bureaucratic procedures covering all aspects of company operations, such as planning, finance, management information systems and others (Forus, 2011). No formal planning, reporting or controlling procedures were in place to dictate employees how they should conduct daily operations. Importantly, in an industry, where one should react quickly to get the new project, these organizational capabilities allowed the company to rapidly catch up with the market trends. This flexible type of firm infrastructure was working well and resulted in a strong competitive advantage for the company before the enterprise started to grow in size and expand globally with the high speed, as onwards it became unfeasible to observe and control the effectiveness of company's operations (Forus, 2011; Hviding, 2011). The failure to ensure corporate planning, reporting and information activities inevitably resulted in some inefficiency within the company. First of all, there was a lack of communication and coordination between Roxar's business units, including regional hubs and offices. Second of all, lack of formal command systems occasionally resulted in resources being inefficiently used. Not only operating autonomous offices around the globe had been very costly for Roxar, but also flexibility of business units to initiate various product developments without appropriate feasibility tests in place, clearly lead to resources being occasionally wasted (Steinsland, 2011). Moreover, by lacking formal planning procedures, company was missing long-term thinking perspective, thereby potentially overlooking external opportunities. Importantly,

often business development decisions were based on the intuition of top management, rather than on the output produced by market intelligence systems (Forus, 2011).

Roxar had always emphasized the importance of **HRM.** Since the establishment, the company had treated human resources as one of the main driving force of the company's success and thereby, had worked relentlessly in order to develop potential and capabilities of its staff (Forus, 2011). HR department in Norway and its supervised divisions in regional hubs, offices were organizing various internal and external trainings to constantly upgrade the skills and capabilities of Roxar's employees (Heggheim, 2011). Myriad leadership and management trainings were in place in order to constantly improve management skills of Roxar's senior level employees (Heggheim, 2011). In addition, extensive internal training and guidance provided by the management, as well as the company's communication systems, were arranged to ensure that employees at all levels were fully aware of their responsibilities and rights (Roxar, 2008). Guaranteeing work within health, safety and environment (HSE) had always been a high priority for Roxar. Thereby, to secure that everyone is acquainted with HSE, all employees had to complete a training programme (Roxar, 2008).

Importantly, Roxar had an advanced recruitment process to attract best minds around the globe from various backgrounds such as geosciences, geology, software programming, engineering, industrial design, petrophysics and chemistry (Heggheim, 2011). Moreover, to reduce the employee rotation and ensure best working conditions for its human resources, Roxar was focused on not putting limits on employees, but instead allowing its staff to grow and reach their potential. The respectful and careful attitude towards its employees had helped Roxar to retain and develop best minds within the company (Hviding, 2011).

Nonetheless, as has been mentioned previously few times Roxar had experienced unethical cases when employees were leaving and establishing their own businesses without respecting IP of the company. Thereby, it can be argued that the enterprise lacked capabilities and experience to provide comprehensive trainings on the IP rights protection for Roxar employees, which could had prevented the occurrence if this issue.

Technology development in manufacturing, including both product and process upgrades had at all times been at the heart of Roxar's operations (Forus, 2011). Thereby, it had been

always crucial for Roxar to ensure that funds devoted to R&D were spent efficiently and resulted in fully commercial products.

Before the acquisition Roxar's R&D and new product development strategy was based on two main elements: 1) developing technology platforms that were used a basis for new products and 2) integrating technologies that allowed separate products to be adapted within one integrated solution. Altogether it ensured a closer standardization between solutions and the transferring of technology to different applications and products (Roxar, 2008). Nevertheless, according to Roxar's employees, new product or technology development platforms were still relatively immature in the past, as no structured ways of suggesting new product ideas and explicit documentation of the existing technology process management practices were present (Hviding, 2011; Steinsland, 2011). Unsurprisingly, this sometimes resulted in resources being used inefficiently. For instance, when top management accepted new product ideas initiated by its employees, no comprehensive assessment of product market feasibility was conducted. Thus, sometimes by the moment it was realized that there were serious drawbacks associated with the introduction of new products, considerable resources in terms of both time and money had already been invested (Forus, 2011; Steinsland, 2011). Moreover, the immature technology development platforms prevented the company from exploiting a rather standardized method of assembly operations, which could help to cut the production expenditure (Steinsland, 2011). One can argue that due to the fact that company had not developed sufficient organization capabilities to perform product and technology development activities effectively, occasionally it lead to scarce financial resources being inefficiently used.

Having looked at the value chain activities of Roxar in combination with R&C the company possessed it can be concluded that the company was strong in many value chain activities before the acquisition. But, it can be inferred as well that Roxar did not focus only on those operations which resulted in competitive advantages for the company.

Considering primary value chain activities (see Figure 13), the company had always been known to run world-class assembly facilities, to acquire supplies exclusively from first-class suppliers and provide best-in-class after sales services, which inevitably resulted in competitive advantages for the company. Nevertheless, one can argue that due to the fact that assembly operations were located solely in Norway, the company was not exploiting its financial resources efficiently. At the same time, lack of financial resources had a negative

impact on Roxar's global expansion, as because of the limited number of company's sales people it was unfeasible to efficiently cover many countries concurrently. Furthermore, the company had experienced the failure of organizational capabilities to ensure timely deliveries of its products, by that undermining the reputation of the company and leading to competitive disadvantage. Thus, it can be stated that although Roxar was relatively strong at all its primary value chain activities, there was a place for improvement, which was difficult to implement when operating as a stand-alone unit due to the limited resources in the company.

Activities	Strengths	Weaknesses
Purchasing	By building a trustworthy reputation Roxar established long-term relationships with suppliers, leading to price reductions and flexibility in placing orders	Long lead times by some suppliers, resulting in late product deliveries High storage costs of inventory
Assembly	With the help of valuable human and technological resources Roxar gained reputation of a world-class manufacturer	Facilities dispersed across Norway led to financial resources being used inefficiently
Warehousing and distribution	Direct contact with customers	Unexploited distribution opportunities for topside equipment
Sales & Marketing	Locally responsive sales force Providing personal approach to each and every client	Insufficient or ineffective link between international divisions Insufficient financial funds to sell globally
After-sales services	High quality after-sales service	-
Firm infrastructure	Extremely responsive to changes in the external environment	Lack of planning, reporting or controlling procedures
Technology Development	Valuable technological resources Large financial resources devoted to R&D	Immature process development platforms Lack of structured ways of suggesting new product ideas and explicit documentation of the existing technology process management
HRM	Providing various internal and external trainings The advanced recruitment process	Lack of capabilities and experience to provide comprehensive trainings on IP rights protection

Figure 13. Summary of Roxar's value chain analysis.

Looking at support activities (see Figure 13), it can be seen that organization capabilities of Roxar failed to ensure the most efficient execution of firm infrastructure, technological development and partially HRM value chain activities. First, as the company was growing

internationally the vague firm infrastructure, in other words the failure to ensure corporate planning, reporting and information transfer activities inevitably lead to some inefficiency within the company. Secondly, although Roxar possessed valuable technological resources, lack of structured ways of suggesting new product ideas and explicit documentation of the existing technology process management practices occasionally resulted in misuse of financial resources. Lastly, insufficient experience to ensure comprehensive trainings on IP rights for Roxar employees few times lead to the technology leakage. Nevertheless, it should be emphasized that Roxar proved to be good at HRM, as for the long time respectful and careful attitude towards its employees had helped the company to retain and develop best minds in the business. All in all, it is clearly seen that although Roxar had a large potential to perform its support activities at the best quality, yet since the company had started to expand rapidly the existing financial and organizational capabilities were not enough to realize it.

5.1.3 Globalization of Roxar

Global Strategy Levers

Discussion of Roxar's global strategy levers is aimed at analysing five dimensions of the company's strategy which determine how global it is (Yip, 2003). This allows evaluating how well the company's abilities were aligned with the degree of globalization industry requires.

First, **global market participation** is examined, which should be addressed by Roxar not simply in terms of global presence but in consideration how participation in a particular country contributes to globalization benefits and the global competitive position of the business. Roxar's strategy of being project-based and thus following customers and entering countries with sales/service people, had certain advantages and disadvantages. It allowed the company to stay customer-focused and to closely follow their needs, however, restricted the opportunity to utilize economies of scale and to be present in potentially attractive markets. Such strategy could be justified for some of Roxar's products, e.g. subsea, which require customization for project-dependent requirements; however, adjustments should be made for internalization and globalization of standardization-possible products.

This is linked to the aspect of **global products and services**. Importantly, researchers agree that almost no products can be completely standardized, yet Yip (2003) suggests that the company ideally should develop the large standardized core with a rather small customized

periphery, which can only be the result of the continuous standardization process. Such products would result in reduced production, sales and coordination costs, therefore, in certain sacrifice of location or situation-specific customer needs. Being in its nature a project-focused company, Roxar avoided the standardization process, yet the potential for a group of standardized products exists, particularly in topside.

Global location of value chain activities is another dimension of strategy referred to as a global strategy lever. According to the classification by Yip (2003), Roxar pursued a much like export-based strategy: the company located most of the value chain in Norway while locating only downstream activities (sales and service) abroad (Forus, 2011). This resulted in concentrated geographic location (yet, dispersed within Norway), which was driven by several factors, including the role of national factor (technology was developed in Norway, industry innovation is mostly concentrated in Norway and benefits from the certain 'the country-of-origin effect'), proximity to many clients and high productivity of Norwegian workers. However, such strategy also resulted in high costs, which could threaten the company's competitiveness in the market. Roxar should aim at adjusting its value chain by locating activities in best different countries for each different activity, for example, as it has developed the office in Russia, which acts as a self-sufficient independent subsidiary of Roxar Software Solutions.

In terms of **global marketing**, which refers to the global approach of developing marketing strategy and programs that blends flexibility and uniformity (Yip, 2003), Roxar had developed a rather appropriate model with a global brand and customized relationships with clients. Such model successfully addressed the high degree of globalization of the industry and the importance of close relationships with customers and their loyalty (Hviding, 2011; Shanahan, 2011). Yet again, bearing in mind the possibility to standardize a range of Roxar's products, the model should be adjusted by placing more focus on cost-saving sales channels, such as catalogues, for these products.

Lastly, Yip (2003) considers **coordination of competitive moves** as a global strategy lever, which if neglected can undermine the competitive advantages built up in individual countries and weaken a business's worldwide position. As most of Roxar's strategic decisions, as well as activities of value chain, happened in Norway, no pressure for coordination existed; and yet lack of coordination among sales offices could be noticed. Moreover, lack of alignment and agreement on the company's long-term strategy across business segments existed even

in Norway, as every move dependent on particular person or team, who did not engage in decision-making with other people or teams (Shanahan, 2011; Tyssen, 2011). To develop a sustainable market positioning, especially, on a global arena, coordination is the primary area for improvements.

The analysis of global strategy levers has identified several dimensions which did not allow Roxar to become global to the necessary extent to serve its clients and sustain competitiveness in the market. In terms of global market participation, Roxar lacked flexibility to gain market share in potential, not established yet, markets, as it simply follows its current clients' projects abroad. The company must adapt its product range identifying the products it can standardize and thus respond to the competitive price pressures. Roxar utilized benefits of its origins in Norway, where most of the innovation in the industry is still generated; however, it should have started relocating some of the value chain activities to establish economies of scale. Global marketing served the company's positioning very well, but it still lacked sales capacity to serve clients across the world and the model may need adjustments if the products become standardized. Roxar lacked coordination of its strategy, which would contribute to sustainability of the company in the long-term.

Global Organizational Factors

The organization of Roxar and integration of organizational factors may either enhance or hamper its globalization strategy. Below each of the factors is analyzed.

Organization structure in Roxar, which is defined as the reporting relationships, was organized across the business segment (or product) rather than geographic dimension (Hviding, 2011), which, according to Yip (2003), supported globalization of the company. However, a rather dispersed structure of the company in Norway (e.g. products from the same product line produced in different locations) posed difficulties on coordination, which has already been identified as one of the main difficulties the company faced. Recent efforts to consolidate activities would benefit coordination processes, which could also prepare Roxar for more intensive international expansion.

Regarding **management processes**, Roxar performed centralized, yet unstructured procedures: the company experienced lack of reporting, planning, information gathering, and knowledge sharing (Shanahan, 2011). This, for instance, resulted in Roxar lacking behind its competitors in some of the technology and developing inappropriate products, mainly due to

lack of coherent portfolio management and sufficient financing in place (Steinsland, 2011; Tyssen, 2011). Such practice would hamper Roxar's plans to grow and develop, especially internationally, not only because of the need to align the company moves and to develop global processes of budgeting, planning, customer management, but also because the crucial component of knowledge sharing and exercising the learning curve would not be in place. Taking into account the age and the size of the company, the existing management processes were inappropriate and could threaten the development of the company.

As far as the **people** aspect is concerned, Roxar had established worldwide business level HR processes, by following international hiring processes, leadership programmes, empowering managers with flexibility, offering international career (Heggheim, 2011; Roxar, 2008). Thus, in this dimension Roxar had developed capacities for international business.

From the perspective of **culture**, Roxar was a truly international company as well: the company enhanced its global identity by establishing a global brand and by choosing English as the corporate language. Still, the company was Norwegian in its values and rules, placing much value to flexibility, responsibility, and egalitarian system (Forus, 2011).

To summarize, organization structure of Roxar was mainly exposed to coordination problems, yet was initially developed across business dimension, which put no constraint for geographic expansion. In order to support global operations of Roxar appropriate management processes should be developed to establish better communication, alignment, and coordination. Moreover, more formalized procedures would enable the company to develop a more sustainable long term-strategy and avoid the waste of resources. In terms of people and culture Roxar had developed as a global player, which should not put any barriers on further expansion of the company.

Furthermore, discussion of the internal environment is used in the next section, where the appropriateness of the strategy pursued by Roxar to address the forces of the external environment is addressed.

5.1.4 Strategy

Having analyzed both external and internal conditions of Roxar before acquisition, the analysis of the appropriate choice of international strategy of the company can be performed.

As stated previously, we have chosen to do the analysis using GI-LS model, mainly because the company operates globally and serves customer needs in Norway and outside. In order to identify which strategy type is appropriate for Roxar, we evaluate the degree of forces for being globally integrated and for maintaining local responsiveness to the market. The evaluation of the appropriate degree of GI and LS, with embedment of the innovation force in the model as suggested by Barlett & Ghoshal (1991), is based on the model of the Globalization Triangle by Yip (2003), which enables to identify the balance between costs and benefits of globalization.

All of the three elements – industry globalization drivers, global strategy levers, and global organizational factors - have been analyzed in the sections above. The main findings of the analysis by the Globalization Triangle model are summarized below (see Figure 14).

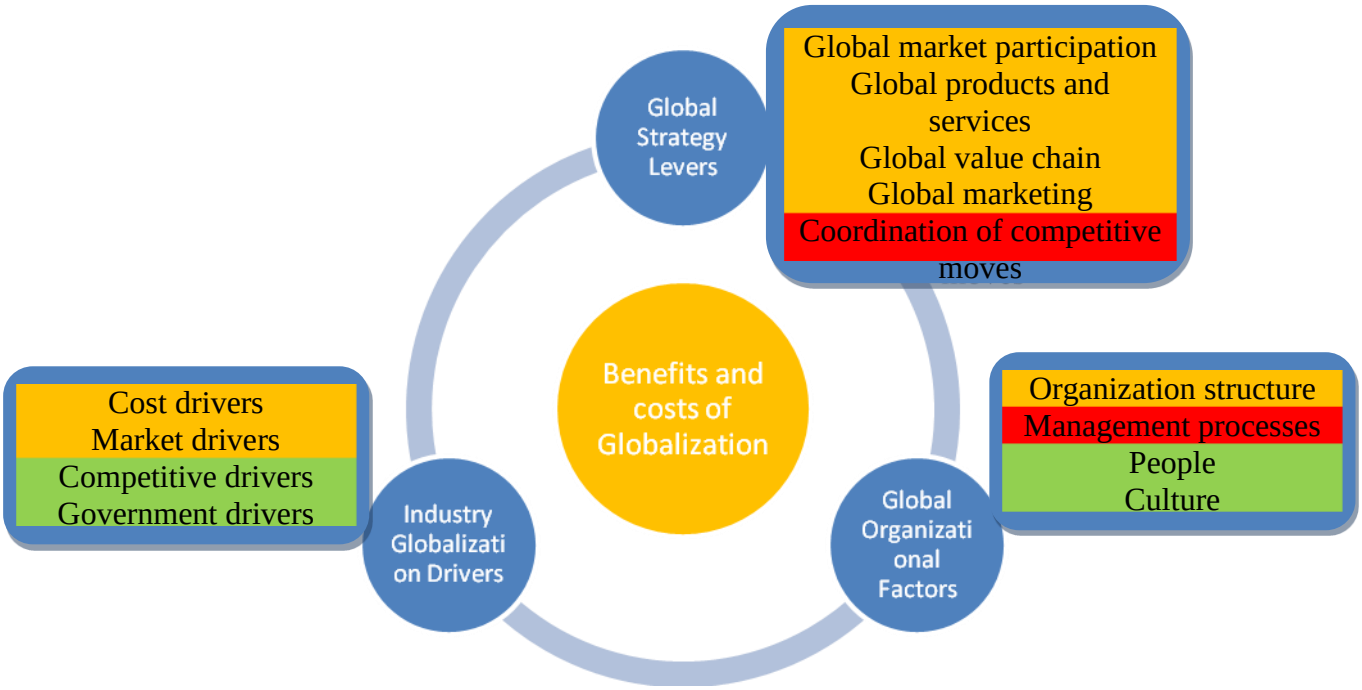

Figure 14. Roxar's Globalization Triangle, based on Yip (2003).

Across every aspect different categories have been analyzed, following Yip (2003). Every aspect has been assigned a particular colour in accordance with its suitability to Roxar's global operations: green being the most appropriate, orange – less appropriate and red - inappropriate. It may be concluded that the company faced rather favourable industry environment, yet had to utilize the cost and market drivers for globalization. When strategy dimensions are concerned, Roxar had to incorporate various changes, including standardizing some of its products, optimizing the locations of its value chain activities and

establishing coordination procedures. More importantly, coordination should be supported with developing appropriate management processes and adjusting organizational structure.

Global Integration vs. Local Responsiveness

The analysis of globalization drivers presented above is the basis for identifying the appropriate strategy for Roxar, facing the particular forces for global integration and local responsiveness. The main drivers for GI, encountered by Roxar, included international customers and competitors, investment-intensive nature of the industry and opportunity to achieve cost reduction through relocating value chain activities and standardizing a range of products, all of which have been suggested by findings of Fayerweather (1982), Fayerweather and Kapoor (1975), Porter (1986), Yip (2003). Nevertheless, the company also faced local responsiveness forces, which are both external and internal. Externally Roxar was exposed to a high demand for customization of many of its products and establishment of close and personal relationships with its clients – the main forces outlined also by Bartlett and Ghoslal (1987) and Prahald and Doz (1987). Internally, Roxar stood weak in many of the coordination aspects and structured management processes, mentioned in previous studies by Teece (1986). Nevertheless, it is important to mention, that the industry offers high potential for operating globally, and the company growth can be achieved by balancing external forces of global integration and local responsiveness, whereas internal forces of LR can be viewed as barriers for globalization of the company and should therefore be overcome through organizational changes.

Based on the consideration of the Globalization Triangle, it can be concluded that before the acquisition by Emerson Roxar behaved as an international company, concentrating most of its activities in Norway, except for sales and after-sales service in its regional hubs and offices, and controlling and developing technologies and management systems at home as well. As the only exception Roxar's office in Russia could be named, which acted as an independent subsidiary, only reporting to Norway, however, this office covers Software business segment which is beyond the scope of this thesis. The main threat of such international strategy type is limited growth potential, as well as threatened competitive advantage sustainability, as Roxar is urged to stay both technology and cost superior, which is not plausible by concentrating most of the activities in Norway.

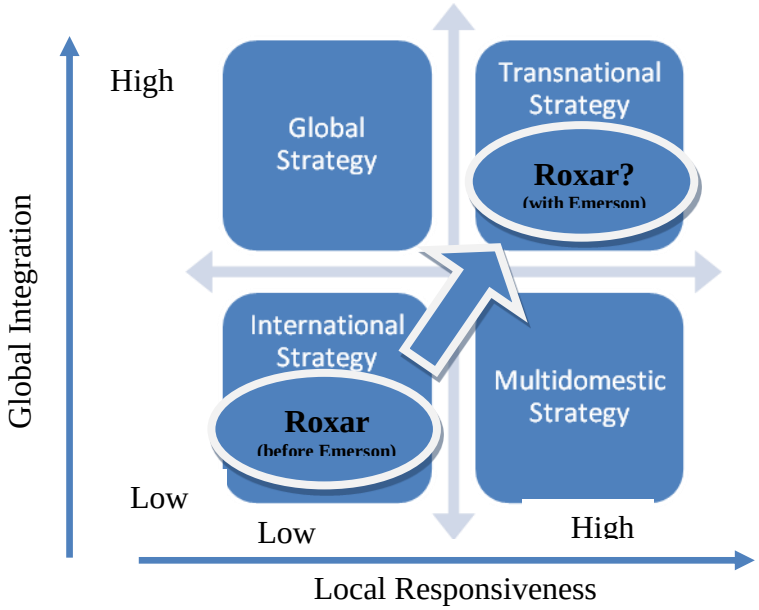

Figure 15. Roxar as a Type of MNC, based on Barlett and Ghoshal (1991).

However, the analysis has provided enough evidence to state that Roxar had the potential to become more global by serving a larger network of international clients, utilizing cost advantages and thus relocating its value chain activities, as well as engaging more in knowledge and information sharing developing a network-type organizational structure. The company could utilize the benefits of providing both standardized and customized products, by developing appropriate coordination and integration systems and identifying centres of excellence for every value chain activity. This way, Roxar could develop transnational strategy in order to adapt to both GI-LS, as suggested by Barlett and Ghoshal (1991) (see Figure 15).

With the acquisition of Roxar by Emerson, and due to the resultant shift in the company's strategy, the relevant questions are whether Emerson could contribute to addressing the forces of both global integration and local responsiveness Roxar faces and how Emerson could achieve it.

5.1.5 Sources of Parenting Advantage

The previous sub-sections have extensively evaluated the conditions Roxar operates in, as well as the company's abilities to withstand them, thus critical success factors and parenting opportunities factors have been identified and in this section they will be simply summarized.

Critical Success Factors

The **critical success factors** of Roxar include external and internal aspects, being derived from both threats and opportunities, and are summarized below (see Figure 16):

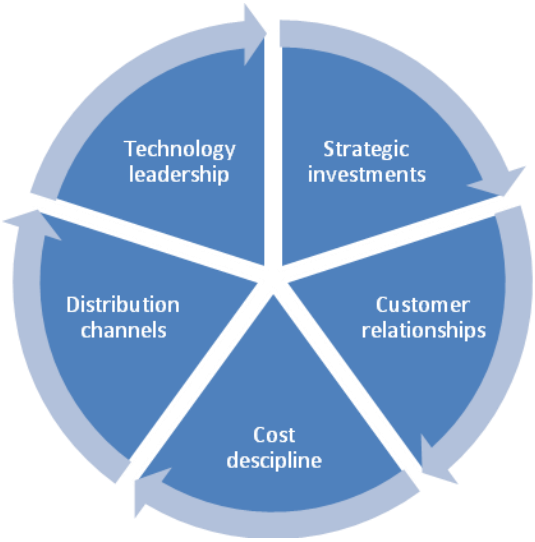

Figure16. Roxar's critical success factors, based on Goold, Campbell, and Alexander (1994).

Taking into consideration the peculiarities of the flow measurement market, Roxar is forced to maintain leader's position in technology advancement in order to sustain intensive rivalry and great demand for continuous improvements in both products and services. Besides that, Roxar faced major financial and organizational constraints which also threatened the company's opportunities to expand its global operations or benefit from economies of scale and scope. This situation let the company realize how essential it is to have accessible funds and to invest them in long-term, and strategically appropriate, development projects. More importantly, technology is the main basis for comparative advantage of the company, yet, as stated by Hviding (2011), superior technology has to be complemented with the best cost structure. Thus, cost discipline, is crucial taking into account the great bargaining power of both few available powerful suppliers and buyers. Apart from that, Roxar should have close and trustful relationships with its clients, both end-users and contractors, which is one of the major components of successful sales in the industry. To support and drive these relationships, the developed distribution channels must be in place, which would provide the customers with the best contact with Roxar, service, on-time delivery, etc. In short, Roxar should maintain its technological leadership in the market and simultaneously develop cost

discipline, adapt its organizational structure to the needs of adjusted international strategy, and nourish the established customer relationships and invest in building new ones.

Parenting opportunities

Parenting opportunities - areas where Emerson could potentially create value - are derived from characteristics of Roxar. Taking into account the suggested areas for patenting opportunities by Campbell, Goold, and Alexander (1995a), various essential places of improvements for Roxar have been identified based on the external and internal analysis performed previously, which are summarized in the table below (see Figure 17).

Area	Description
Size and age	Young business culture: insufficient financial resources to develop globally, entrepreneurial corporate culture, lack of reporting or controlling procedures, inefficient exploitation of resources
Management	Lack of appropriate functional/organizational skills, lack of business optimization processes, lack of market intelligence systems, lack of strength in IP protection
Business definition	Lack of long-term strategy definition, lack of alignment in developing a product portfolio
Linkages	Insufficient or ineffective link between international divisions, insufficient or ineffective link to other businesses, e.g. Emerson's companies becoming suppliers; potential for higher utilization of foreign offices
Common capabilities	Unexploited capabilities that could be shared with other businesses: developing new products together
External relations	Lack of capacity in managing relations with suppliers and serving customers across the world on time;
Major decisions	Lack of capacity in integration processes, hectic leadership/decision-making
Major changes	Lack of experience in becoming truly global and implementing changes in particular areas concerning consolidation and standardization of production and usage of alternative distribution channel

Figure 17. Parenting Advantage Sources for Emerson in Roxar, based Campbell, Goold, and Alexander (1995a).

Due to the limited experience of Roxar and its origins, the company pursued very entrepreneurial corporate culture – informal and unstructured - which was not suitable for such a fast-growing company with potential to expand more (Hviding, 2011). Another area for improvement was talent management as the company was facing a threat of high employee turnover with many people being head-hunted by oil companies (Hviding, 2011). Besides that the company was limited in financial resources and had accumulated large debt

prior to the acquisition. All of that signalized of the need to change management style: Roxar lacked planning, organizational, data gathering and information and knowledge sharing processes, which, as admitted by the company representatives, was needed to support the growing size of the company. Besides that, Roxar experienced difficulties with handling supplies and thus meeting delivery times for their end products, which was another area needed to be improved. Additionally, partly because of entrepreneurial corporate culture, the company lacked a unifying long-term business strategy and alignment across the divisions, which also resulted in quite emergent development of business portfolio (Steinsland, 2011). More value could be created by enhancing linkages both with foreign offices of Roxar, which were not engaged in the strategic decision-making, as well as with potential partners and suppliers (Vikingstad, 2011). Externally, the company also lacked capacity to serve the needs of its global customers, as due to the size of the company and project-focus Roxar could not afford to have representatives in most parts of the world (Hviding, 2011) (Shanahan, 2011). The company representatives also emphasized the importance of protecting its IP, which was quite difficult for Roxar to implement taking into account limited resources and lack of expertise in this field. Roxar could experience some value creation through unutilized opportunities of alliances where common capabilities could be used, e.g. in developing new products. Regarding the managerial aspect, due to entrepreneurial environment, decisions were often based on expertise of a particular person, which could have resulted in lost opportunities (Forus, 2011). Lastly, improvement potential could be identified in relation to the company's adaptability to changes: e.g. Roxar identified the need to become more global and to consolidate its production facilities, yet the process was very slow and painful (Hviding, 2011), probably, due to lack of experience in implementing major organizational changes.

5.1.6 Emerson's Capabilities

Having analyzed Roxar, it is important to examine Emerson in order to evaluate if the companies represented a fit which would create a basis for value creation. **Emerson's characteristics** are analyzed across five sections, as suggested by Goold, Campbell, and Alexander (1994). The aspects of Emerson's characteristics are summarized in the figure below (see Figure 18).

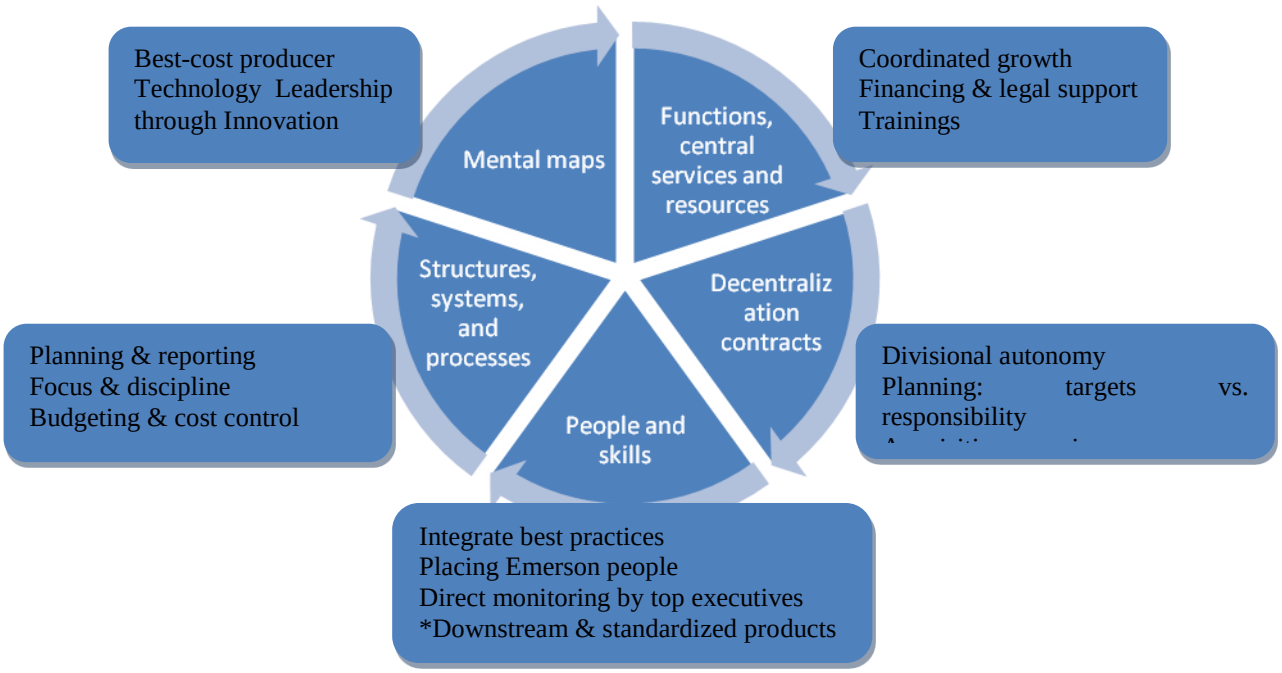

Figure 18. Characteristics of Emerson, based on Goold, Campbell, and Alexander (1994).

Mental maps of Emerson, which refer to internal models and rules of thumb guiding parent's perception of business improvement opportunities, are based on the primary goal of the company to be the best-cost producer (Svendsen, 2011). This drives Emerson's efforts to increase efficiency and to create new models of cost cutting. Apart from that, technology-focus is embedded in Emerson's thinking; the company claims its market positioning as 'Technology Leadership through Innovation' (Emerson Electric Company, 2011). One of the evidence of such claim could be the fact that in 2010 37% of total sales were generated by new products developed by a diversified portfolio of companies under Emerson's umbrella (Emerson Electric Company, 2011). It is crucial to emphasize that such mental maps are in line with Roxar's operations and its intensive technology-focus. This means that Emerson, as a parent, can create the appropriate initiatives and set targets for business improvements for Roxar to strengthen its competitive advantage, which is based on innovation, and also by improving Roxar's cost structure.

The mechanisms Emerson uses to create value in its businesses include various **systems and processes**. First of all, Emerson is a planning-focused organization, which results in all businesses under Emerson pursuing extensive planning, which involves thorough considerations across areas of geographical growth, technology, operations, and customer-interaction platform (Shanahan, 2011). Emerson states that it builds its operations on focus and discipline, which are based on four business imperatives: strengthening business

platforms, pursuing technology leadership, globalizing assets, and driving business efficiency (Emerson Electric Company, 2011). Such disciplined processes is the area of management expertise which Roxar clearly lacked and thus was constrained in its growth: extensive planning and budgeting aligned and thought-through long-term targets and strategy could help Roxar to pursue focused and integrated development.

Another aspect of Emerson's characteristics includes **the functions, central services and resources**. With respect to Emerson, several crucial components can be named. First of all, Emerson centrally considers opportunities to expand served markets and growth potential (Emerson Electric Company, 2011). Thus, as a parent, Emerson is capable to guide the business in order to capture bigger markets and develop in the appropriate direction, which was necessary for Roxar to pursue an integrated and coordinated growth. More importantly, Emerson serves as an internal financing source both when using cash for acquisitions and when strengthening business platforms and market positioning (Emerson Electric Company, 2011). In case of Roxar, Emerson could solve the company's problems of large accumulated debt and provide accessible capital for investments in R&D and global expansion (Graves, 2011). Apart from that, Emerson has extensive base of trainings which are advised and provided within the company to improve the necessary skills of employees. The parent could also help with utilizing its sales network and presence on trade shows and other marketing events (Olsvik, 2011).

Additionally, Emerson could be characterized by its **people** possessing certain – unique – expertise. In comparison to Roxar, Emerson's people possess skills of formal and appropriate reporting, control, cost-cutting, planning, and logistics management (Forus, 2011; Shanahan, 2011; Svendsen, 2011). All of these expertises could be introduced into Roxar to address its needs for improvements in these particular areas. Moreover, Emerson, when completing an acquisition, shares its best practices with the company providing the necessary management tools and training, as well as integrating few Emerson people into an acquired firm (Forus, 2011). Such practice should enhance integration and acquisition synergies. Besides, Emerson's management is very disciplined in following the performance of its businesses and top executives personally take part in planning and monitoring processes, e.g. CEO and CFO personally attend biannual operational summits (Svendsen, 2011).

However, with regards to people and skills it is necessary to mention that Emerson's operations differ from Roxar's by a large extent. First, most of Emerson's activities in oil and gas are in downstream, whereas Roxar operates in upstream. Additionally, Emerson lacks expertise in subsea products. Finally, most of the products within Emerson are off-the-shelf, which are standardized and can be sold by catalogue. In contrast, most of Roxar's products are customized (Forus, 2011). This can threaten Emerson's ability to create value by parenting Roxar. However, if Emerson acknowledges the areas where it lacks expertise and leaves them under Roxar control and responsibility yet helping with other areas, value destruction is very unlikely. For instance, if Emerson helps Roxar to standardize the products which are possible to standardize, Roxar can benefit straight away from Emerson's sales network and established marketing channels.

Finally, the '**decentralization contract'** between Emerson and Roxar should be considered. It refers to degree of Emerson's involvement into Roxar's processes and how easily it can be integrated with Roxar's corporate culture (Goold, Campbell, & Alexander, 1994). Emerson pursues the system of 'divisional autonomy', which means that Emerson sets targets collaboratively with business's management and provides initiatives, yet leaves responsibility over arriving at the targets under business (Shanahan, 2011; Tyssen, 2011). More importantly, Emerson acknowledges expertise in certain areas of particular businesses, e.g. R&D and engineering, and does not interfere with imposing strict guidelines on how to proceed. It seems that Emerson focuses more on improving management processes and establishing efficient support functions when it concerns controlling businesses. Imposing new processes, which require formal procedures, is supposed to be met with negative response, especially in a hectic environment as the one Roxar used to have. However, the fact that most of employees understood the need for Roxar to change and adapt to the conditions it faced both externally and internally, the change process is not expected to be unpleasant for everybody (Heggheim, 2011; Hviding, 2011). Additionally, as both companies have experienced multiple acquisitions, the integration process should not cause extreme difficulties.

5.1.7 Fit between Roxar and Emerson

Having analyzed characteristics of both Roxar and Emerson, it can be concluded that the there is a reasonable fit between the companies and thus the potential of value creation through parenting advantage is present. It is important to emphasize that Roxar faced various

areas which could be named parenting opportunities and for most of them Emerson possessed complementing characteristics. The summarized analysis of the fit between Roxar and Emerson is provided below (see Figure 19).

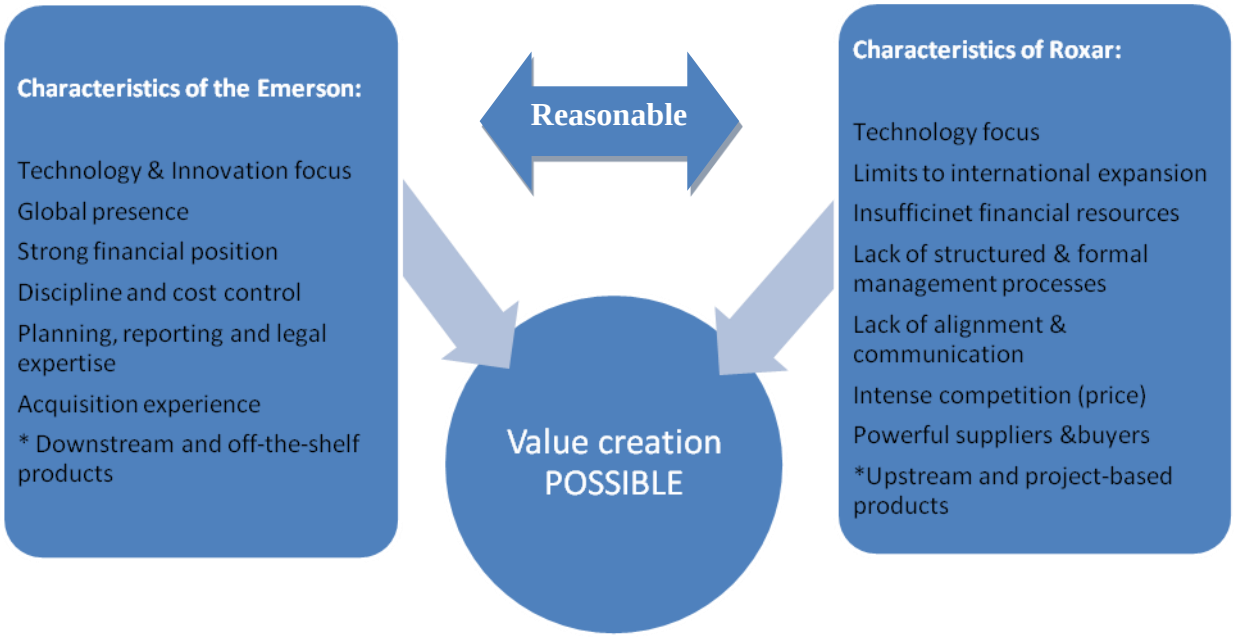

Figure 19. Fit between Emerson and Roxar, based on Goold, Campbell, and Alexander (1994).

Having identified that Emerson possessed the right characteristics to enhance areas where Roxar needed improvements, based on the forces coming from the evolvement of the industry and on the internal resources and capabilities of the company, it can be stated that Roxar could expect the acquisition to result in strengthening of its competitive advantage, mainly through Emerson's support in cost management and development of formal processes to improve alignment and coordination in the company. This has also been supported by the company representatives, for instance, Hviding said:

"*…we would become commoditized at some time, but therefore we have to change our business process from being technology leaders to become cost, delivery, quality and channel leader…And that's why I believe Emerson […] would be good partners for us, because, as having a global network of manufacturing, sales, distribution, that could help us to moving from a technology company to a more traditional industrial company where you compete with channel and price."*(2011).

Based on this reasoning it can be concluded that Roxar represents a Heartland business from the point of view of Emerson. Yet, it is also important to consider the potential sources of misfit (Campbell, Goold, & Alexander, 1995a), which as opposed to the fit, can lead to value destruction (e.g. through irrelevant incentives) and destroy the business under supervision of the inappropriate parent, as suggested by Campbell, Goold, and Alexander (1995a). In case of Roxar and Emerson, an obvious danger lies in difference in the type of products the companies focus on: downstream vs. upstream and standardized vs. customized. Emerson lacks expertise in the industry Roxar operates, thus the parenting could result in value trap. However, if Emerson acknowledges this misfit and does not interfere into the processes where it could destroy value, but rather focuses on and influences the areas it has expertise and the right skills, value trap can be avoided. Thus, although, there is a potential threat of value trap, based on the analysis of characteristics of the companies and Roxar's critical success factors, there is a much higher likelihood of building a heartland business (see Figure 20).

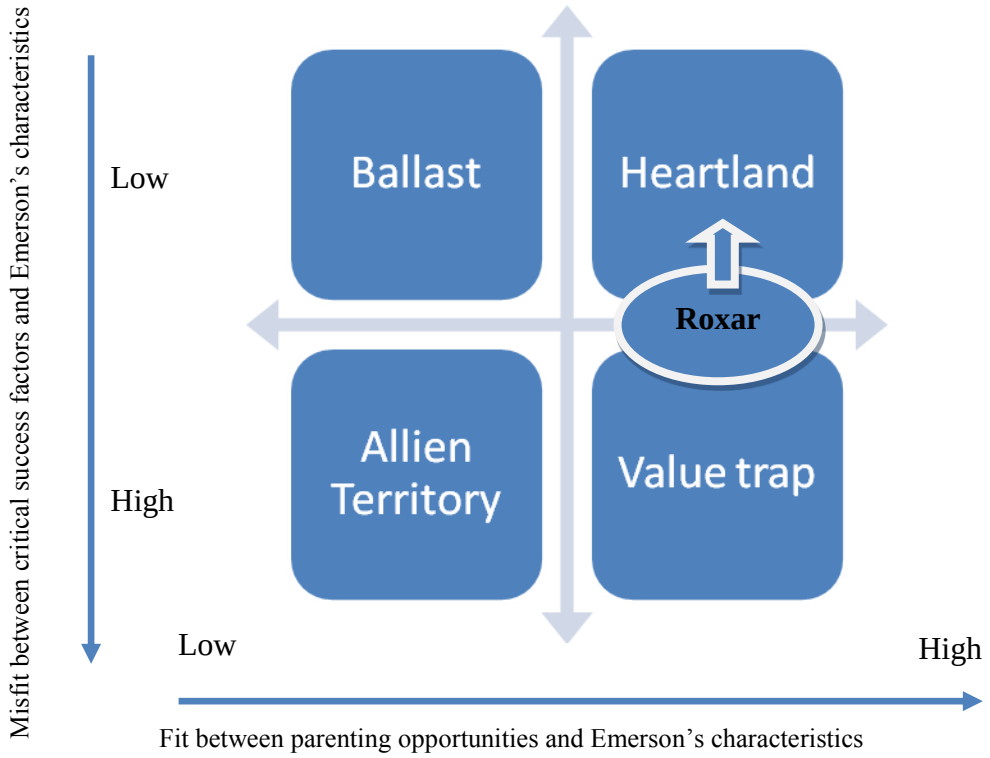

Figure 20. Emerson's Fit Matrix, based on Campbell, Goold, and Alexander (1995a).

The analysis above has provided extensive examination of the fit between Roxar and Emerson, identifying both the areas of improvements for Roxar to address its internal and external challenges and Emerson's capabilities to provide skills and resources in doing that.

5.2 Realization of Potential Benefits: Impact of Emerson on Roxar

The analysis of potential benefits above has been aimed at looking at the aspect of the reasons for Roxar's acquisition and potential of Emerson's characteristics to match Roxar's areas for improvement. In this part, the second aspect - the analysis of the ways Emerson has delivered value creation by improving processes in Roxar - is presented.

5.2.1 Ways of delivering value to Roxar

Following Goold, Campbell, and Alexander (1994) four sorts of parent's influence are analyzed, to find if Emerson has indeed built the parenting advantage by enhancing Roxar's value.

Stand-alone Influence

Through stand-alone influence Emerson can influence Roxar's strategies and performance. Various tools, as suggested by Goold, Campbell, and Alexander (1994) can be used, which Reinton and Foote (1988) divide in three categories, based on the goals of parent's influence.

Roxar certainly lacked expertise in developing integrated **long-term strategy**, as noted previously; often business development decisions were based on the intuition of top management, rather than on the analysis produced by market intelligence systems (Forus, 2011). Thus Emerson, having more extensive skills, broad experience and appropriate tools for planning and developing businesses in place, contributed to Roxar a lot in this respect. Emerson has incorporated into Roxar its **planning procedures and tools**, which resulted in coordinated portfolio management, key initiative development and coherent guidelines where the business should be directed, which keeps the company focused on the important issues and avoids wasting resources.

Together with Emerson's management Roxar's top managers, with the former employee of Emerson - Bret Shanahan in charge, have come up with **key business development initiatives**, clearly stating on what aspects Roxar should put its focus on. Key initiatives cover such crucial areas as customer intimacy, effective supply chain management, market leadership in particular products, technology development and others, which are all, aligned with Emerson focus areas (Tyssen, 2011). Inevitably, there have been many changes within

Roxar. To start with, the company has identified two main products sectors it should sustain its market leadership in. Importantly, having that goal or that strategic initiative, it makes it easier to get done the acceptance for the development of projects and products Roxar is focused on (Tyssen, 2011). Moreover, portfolio and project development processes are now implemented according to the long-term planning tools developed by Emerson (Steinsland, 2011). As opposed to the previous practice by Roxar, when the product development potential was mainly dependent on the convincing abilities of its creator (Tyssen, 2011), now each and every product is evaluated based on different gate criteria, including market opportunities, resources committed, quality required, strategic implications and others (Steinsland, 2011). Significantly, Emerson is particularly focused on strengthening Roxar's business platforms coupled with pursuing technology leadership, which could improve sustainability of Roxar's competitive advantage (Farr, 2011). The great emphasis is put on the product portfolio development, which is aimed at promoting value optimization, creating of accurate balance between new and existing products and sustaining engineering and cost reduction (Steinsland, 2011). Notably, Emerson stresses the importance of the development of technology platforms, as a part of cost reduction and standardization process for each product (Forus, 2011). Moving on, it is crucial to emphasize that key business development initiatives, covering customer intimacy and effective supply chain management, have helped Roxar to neutralize important weaknesses it experienced before the acquisition. For instance, new supply management practices, focusing on supplier quality, on-time delivery and demand pull techniques to manage inventory turns, have benefited the company in terms of both decreasing the extremely high costs of inventory on hand and improving on-time deliveries (Forus, 2011; Svendsen, 2011). Taking into account the power of suppliers in the flow measurement sector, first, these changes had rather negative impact on the company, as Roxar lost its flexibility in terms of orders. However, decreased storage costs and improved deliveries are exemplifying that company is moving in the right direction (Forus, 2011; Svendsen, 2011). Moreover, Emerson stimulated Roxar to introduce various customer satisfaction surveys, which have now been frequently performed, in order to ensure that its products meet all the demands of buyers and identify product and service improvement opportunities. Crucially, once Roxar gets the results either on on-time delivery or customer satisfaction, it is benchmarked to the other companies within Emerson. If results are good then the company is encouraged to continue the good work, but if results are lagging then Roxar has to come up with explanations. It can be concluded that Emerson has identified important areas it would like to focus on and which Roxar could be better at; thus by

integrating them into Roxar's overall long-term strategy Emerson ensures the ongoing improvement in crucial for Roxar's business development directions (Forus, 2011). It is crucial to notice that the focus on the key business initiatives, and the development of technology platforms in particular, allows Roxar to significantly cut its manufacturing costs and gain the valuable experience in optimizing and potentially standardizing its assembly operations.

Apart from that, Emerson has introduced various programmes which enhance **management's motivation to perform.** First, Emerson pursues a very strict cost-discipline – business efficiency is positioned as one of key long-term strategic imperatives of the company (Farr, 2011), thus motivating Roxar's management to find more cost-effective ways of operating. Emerson has incorporated various cost control systems, including monthly forecasting and outlooks, quarterly meetings with Emerson HQ (Graves, 2011; Nødland, 2011). There are different conferences, including world-area planning conferences, internal planning conferences, and quarterly meeting with Emerson HQ, each of all are aimed at motivating managers to perform at their best (Shanahan, 2011). This is of primary importance for Roxar, which experienced great pressure for becoming more cost-effective, which is also crucial for sustaining its competitiveness in the market. Then, Emerson has also enhanced establishment of key initiatives, giving responsibility for delivery of particular targets to specific managers (Svendsen, 2011). As opposed to Roxar in the past, where highly autonomous business units were often behaving in an opportunistic and entrepreneurial manner and lack of corporate planning and reporting often resulted in inefficiency within the company; the enterprise operates according to the strict discipline now, by that ensuring the most efficient use of the resources on a corporate level (Tyssen, 2011).

As Roxar was quite limited in its financial resources, and was mostly focused on growth, Emerson provides a great opportunity to give Roxar access to its skills and resources in **upgrading management**. First of all, Emerson has shared its best practices and tools regarding planning, forecasting and cost control as stated in the previous points. Additionally, the company has integrated several people with Emerson background, for instance, Bret Shanahan and Richard Graves, to drive Roxar's learning curve and experience faster adaptation to all of Emerson's resources. In addition to that Emerson has introduced myriad management training programmes on leadership which are implemented on

European level, global level and locally in different areas (Heggheim, 2011). Besides that, Emerson has provided Roxar employees with extensive training opportunities in terms of ethics, trade compliance, conflict of interest and foreign corruption (Heggheim, 2011).

All of these new introductions require more paperwork and more time from Roxar's employees (Forus, 2011; Heggheim, 2011; Hviding, 2011). Yet for most of the processes it has been acknowledged as the necessary changes to make the company more coordinated and the decisions across different product lines integrated (Hviding, 2011; Steinsland, 2011). That is why, it can be assumed that Emerson has managed to avoid value destruction through inappropriate influence or excessive overhead costs, mentioned by Goold, Campbell, and Alexander (1994) as one of the main threats of parenting; Emerson has introduced changes in the areas where it is known to perform the best - strategic planning and cost control. More importantly, Emerson has proven to avoid changing or influencing areas where it lacks expertise or resources. For instance, Emerson lacks knowledge about specific technology Roxar produces, namely software and subsea, thus keeps its influence on these areas limited and takes into account the possible differences in running business in a different segment than most of companies under Emerson's umbrella (Forus, 2011; Shanahan, 2011). It should be concluded that we agree with Goold, Campbell, and Alexander (1994) who referred to Emerson as one of the examples of successful stand-alone influence.

Linkage Influence

Emerson has also enhanced Roxar's value by establishing linkages between Roxar and other businesses under Emerson's parenting, especially in the segment of EPM, which provide, to a limited extent though, complementary products. Acquisition by Emerson has resulted in synergies across various areas, including such value chain activities as manufacturing, logistics, suppliers, sales, and R&D, which have been found evident in other acquisitions as well by Brush, (1996), Hansen & Løvås, 2004, Reinton and Foote, (1988).

Coordination, which is perceived by Child (1984), Crowston (1997), Hill, Hitt, & Hoskisson (1992), Mitzberg (1983), Luke, Begun, & Pointer (1989) to enhance performance in acquired companies, has been addressed by Emerson as well. For instance, Emerson has appointed Ottar Vikingstad, a former employee of Roxar, to take the responsibility over Global Oil and Gas segment to look for cross-divisional opportunities and thus to identify potential synergies (Vikingstad, 2011). Apart from that, it is important to emphasize that

Roxar has joined a set of companies under Emerson's umbrella which operate in related businesses, which according to findings by Jones and Hill (1988); Hill, Hitt, & Hoskisson (1992), Porter (1987;) Sigh and Montgomery (1987), Teece (1982), should result in better integration of Roxar as well as better utilization of potential economies of scale and scope made available through linkage effect.

First of all, Emerson has addressed Roxar's need to employ cost-savings by relocating some of Roxar's topside instrumentation **production activities to Romania** - Cluj, thus pooling manufacturing together with other companies under Emerson's umbrella (Svendsen, 2011). It is aimed at significantly reducing Roxar's production costs, which as has been mentioned previously were extremely high due to the dispersed manufacturing locations throughout Norway, which is known to be amongst countries having the most expensive production factors in the world. Although the research and technology development activities will still be located in Norway, by moving its assembly facilities to Cluj, the company will have an access to cheaper production factors, which will inevitably result in more competitive prices for Roxar's topside products (Svendsen, 2011).

Apart from that, Roxar is now able to use the Emerson's established **infrastructure, including sales and logistics channels**. For instance, in order to reduce costs of operating offices in the Middle East, Emerson has suggested moving Roxar's office in Bahrain to Emerson's office in Dubai (Hegghein, 2011). Importantly, the co-location of offices is taking place in many countries, by that optimizing the existing resources on a corporate level. On top of that, Emerson shared its market intelligence systems with Roxar, so that remuneration and welfare benefits of employees would be suitable to the environment of operations (Heggheim, 2011). Moreover, Roxar has already started to exploit Emerson's sales and service channels. Due to the high costs, Roxar has not managed to establish any offices in Canada in the past, thus potentially overlooking important customers there. However, by being a part of Emerson Roxar has got an access to Emerson's partner in Canada, which has more than 1000 service employees in oil and gas operations and who might represent Roxar's interests in this country (Shanahan, 2011). On top of that, some of Roxar's topside products are sold in Emerson's catalogues (Tyssen, 2011). This is an important change for Roxar, as previously the company was not focusing on commoditizing topside equipment. The gradual transformation of the topside equipment sector from project- to product-based ensures that now the firm operates more efficiently in terms of both cutting manufacturing

costs due to the standardization practices and targeting more global customers. Crucially, Roxar has gained the opportunity to be involved in large projects of Emerson, thus obtaining larger order quantities, especially for topside instrumentation. Besides, the process of **bundling** Roxar's and Emerson products has been triggered. Sales force of Emerson business units is trained to pull both the topside control systems and the subsea equipment into the larger systems, by that providing bigger value and larger solutions not only for Roxar's customers, but also for Emerson corporate clients (Vikingstad, 2011). However, one can argue that as the number of products grows, sales people might have less knowledge about all products included in portfolio (Tyssen, 2011). Thereby, a lot of efforts to be put on providing comprehensive training for sales people, otherwise having too broad portfolio without dedicated people to sell it out could result in lost opportunities for both Emerson and Roxar.

In addition, by being a part of Emerson, now Roxar has an access to cheaper transportation rates provided by some logistics companies working with Emerson (Svendsen, 2011). The company is stimulated to select logistics lines that have been leveraged with other Emerson business units to drive price efficiencies.

Crucially, another important synergy has arisen from several opportunities to use other Emerson's products as Roxar's components, thus addressing, at least to some extent, the prevailing strong bargaining power of external suppliers in the market. Synergies have been recognized and are tried to be employed with regards to Roxar's outstanding expertise in subsea business: supported by Emerson Roxar participates in **co-development of new products**, which both open new growth areas and allow to gain more market power by offering bundled complementary products. For example, at the moment Roxar is collaborating with one of Emerson companies - Rosemount on the development of a Rosemount product to be used on some of Roxar's subsea instrumentation products (Tyssen, 2011). In addition, the company is negotiating with Rosemount to apply their core technology used in some topside products to Roxar's subsea instrumentation. This is a great opportunity for Roxar, since the company can have more control over the critical part of its supply chain, having internal suppliers ensures more trustworthy cooperation (Tyssen, 2011). However, it should be noted that other companies within Emerson are beneficiaries as well. There is a great potential for the topside equipment they produce to be deployed subsea

and Roxar possesses the knowledge that can help them to get there (Shanahan, 2011; Tyssen, 2011)

The changes introduced by Emerson through linkage influence can be perceived as highly appropriate for Roxar: not only have some of them allowed Roxar to enhance cost competitiveness, but are also expected to provide more solid business platform supported with shared value chain activities.

Functional and Services Influence

The main functional and service influence Emerson places on Roxar, concerns financing and HRM. Importantly, Emerson, possessing great financial resources, has helped Roxar to overcome its financial vulnerability and also offers accessible financing for business development purposes (Graves, 2011; Nødland, 2011). Before the acquisition, Roxar experienced problems with financing its long-term global business development due to its investors being interested in making fast money. Inevitably, Roxar's team felt that some of its products were lagging behind. In contrast, Emerson having more long-term focus and understanding the importance of technology development, is more willing to invest in people and innovations (Tyssen, 2011). Solid financial resourcing grants Roxar with better opportunities to sustain its technological leadership and to be more aggressive in penetration of new market, both of which contribute to Roxar's ability to withstand tough rivalry. Additionally, the financing has become tightly incorporated in strategic planning and reporting, ensuring that only the value-adding projects, which are relevant for the whole business portfolio, receive funding (Graves, 2011; Nødland, 2011). Emerson has introduced a comprehensive trade compliance programme, which includes the classification of products and their mark-ups, which Roxar didn't have before (Graves, 2011). Now everything has to be classified and calculated, documented, and approved (Nødland, 2011). In addition, Emerson initiated the introduction of Presence Operating Reports or PORs, which allow analyzing the effectiveness of the company's financial operations on a monthly basis (Heggheim, 2011). As a consequence, Roxar performs monthly meetings to go through the results of the month, to check what the quarter outlook is, and then defines the outlook, forecast for the rest of the year, by that improving both the planning and budget sides (Graves, 2011). Overall, a plenty of new areas and disciplines covering trade compliance, credit control, internal control have been introduced, thus requiring Roxar employees to

provide a more frequent and rigid financial follow-up for everything from the top-line to the bottom-line (Nødland, 2011). This again adds to solving the problem of lack of coordination and alignment, which often resulted in scarce financial resources being used inefficiently within Roxar before the acquisition.

Apart from that, Emerson has had an impact on HRM as well. Emerson provides various training opportunities for Roxar employees at all levels. In addition to management leadership programmes, Roxar employees are stimulated to attend mandatory training programmes in terms of ethics, trade compliance, conflict of interest, foreign corruption and others. Furthermore, the recruitment process of Roxar has been updated to account for criminal and financial records of potential employees (Heggheim, 2011). Overall, Emerson puts a great emphasis on the ethics and prevention of conflicts of interests; thereby now Roxar's human resource system is built in way to avoid the occurrence of any kind of unethical issues in advance. This is of great importance for the company, since it experienced several cases of its previous employees showing disrespect towards Roxar's IP protection. Nevertheless, it should be note that transformation of Roxar's human resource system from being rather trust- based to control- based is a very challenging and time-consuming process, requiring a lot of work and efforts from Roxar employees. Yet, as has been mentioned before, most of the changes have been justified, as they help Roxar to maintain its market power by protecting its valuable assets, which are a core of the company's competitive advantage (Heggheim, 2011).

Crucially, Emerson still leaves most of the activities under responsibility of Roxar, following its strategy of 'divisional autonomy', which enables the company to avoid value destruction through unnecessary overhead costs, postponed decision-making process, or unresponsive support.

Corporate Development Influence

As Emerson acquired Roxar, driven by its strategic imperative of the strengthening business platforms, it is also important to discuss the influence through corporate development (Farr, 2011). This sort of influence has been thoroughly examined in the previous sub-section by analyzing the fit between Roxar and Emerson, which is of critical importance for sustainable value creation under a new parent. More importantly, a successful parent, as argued by Goold, Campbell, and Alexander (1994), performs a systematic screening for acquisitions,

which Emerson has been doing for decades, thus it may be assumed, that appropriate processes are in place.

Apart from this issue, it is important to consider how Emerson integrated Roxar under its umbrella. The integration initially concerned the corporate functions of Roxar, and only later – after ca. one year - channelling of the new structures and procedures through the entire organization took place (Forus, 2011). Such process, complemented with integration of few Emerson people in the organization, aimed at soft transition of Roxar from being an independent company to being a part of the very large portfolio of Emerson's businesses. However, some tension took place as Roxar's staff had to adapt to additional workload and initially seemingly-unnecessary procedures. Yet, as has been stated before, most of the changes have been justified, as they were needed in order for Roxar to be able to grow further. Moreover, following the argument by Cormier and Hagman (1987), and Finkelstein and Haleblian (2002), of the advantage of previous acquisition experience in the integration process, and taking into account that both Roxar and Emerson possess this experience, it can be concluded that the companies are entitled to a successful post-acquisition period.

Having identified the potential of Roxar to become a heartland business under stewardship of Emerson, the ways how it could be achieved have been examined. It has been found that Emerson has created value by parenting Roxar through all four sorts of influence, with an important condition of Emerson not impacting the areas of Roxar's business where Emerson lacks expertise or resources. The summary of post-acquisition benefits is provided below (see Figure 21).

Sort of parent's influence	Parenting opportunities	Value creation
Stand-alone influence	Lack of long-term strategy definition Lack of formal planning procedures Lack of appropriate organizational/functional skills Lack of business optimization processes Hectic leadership/decision-making Entrepreneurial corporate culture Insufficient or ineffective link between international divisions Lack of experience in product standardization practices	Development of key business initiatives Bringing in long-term perspective Introduction of corporate planning and reporting tools and procedures Introduction of a very strict cost-discipline across divisions Upgrading of management Introduction of processes aimed at product standardization enhancement
Linkage influence	Insufficient or ineffective link to other businesses Lack of capacity in managing relations with customers and suppliers across the world Unexploited distribution channels for topside equipment Lack of experience in production consolidation	Pooling manufacturing activities Sharing offices abroad Exploitation of common sales and service channels Bundling products Sharing logistics systems Co-development of new products
Service and Functional influence	Insufficient financial resources Inefficient usage of financial resources Lack of strength in IP protection	Access to solid financial resources Introduction of comprehensive financial control systems Introduction of extensive HR training systems supporting IP protection
Corporate Development influence	Insufficient or ineffective link to other businesses	Integration under Emerson umbrella

Figure 21. Post-acquisition benefits

5.2.2 Strategy: Appropriate now?

Having looked at both the conditions Roxar operated in and how the company responded to them before the acquisition and the changes introduced as the result of the acquisition by

Emerson, it is important now to evaluate how appropriate Roxar addresses the market forces now and how it contributes to sustain its competitive advantage.

It is essential to analyze, following Yip's model Globalization Triangle, how well Roxar exploits the potential of the industry and whether the changes commenced by Emerson has enabled to adjust both the organizational factors and strategic levers to meet that potential. Having seen in the previous sub-section how Emerson have influenced Roxar, it is possible now to look if Emerson has also helped to create value from improving the elements where Roxar was lacking and, essentially, whether it has not destroyed the value by mistakenly changing the elements where Roxar stood strong.

If we look at the industry globalization potential, Roxar now performs much better when it concerns the cost drivers: the company is looking for opportunities to cut costs of production, supplies, and logistics. Roxar has already managed to cut costs by half for some products through more efficient sourcing processes brought by Emerson (Shanahan, 2011). This will help Roxar to strengthen its benefit from global operations and strengthen its market position. As far as market drivers are concerned, this element could not be addressed through the changes led by Emerson: customers still have diverse needs for products, especially in subsea, mainly due to diverse physical conditions of reservoirs. Nevertheless, it is expected that with the evolvement of the industry and technology, it will be able to address the diverse needs across the world, i.e. for particular conditions of reservoirs etc., with the same products.

Across the global strategy levers, Roxar has implemented improvements in global market participation and value chain, which have been due to optimization of the activities, and transfer of some activities to more appropriate locations, like production facilities to Cluj. The most tremendous changes have been observed in coordination activities, with the company becoming very aligned and well-coordinated through shared planning procedures and more rigorous reviews, which have helped to identify the key strategic deliverables for the entire company. Through the evolvement of the industry and based on Emerson's practice of selling off-the-shelf products, some forces for standardization have been in place, yet, as has been discussed before, the potential for standardization is still present and is mostly dependent, especially in subsea, on the organic development of the industry. The same argumentation concerns marketing, which can't be truly globalized yet due to the

requirements of maintaining close contact with the customers, however, this is also expected to change in few decades when both the company and the industry grow.

Looking at the organizational factors, Roxar has benefitted from Emerson by improving the organization structure and implementing the appropriate management processes. Roxar has consolidated most of its activities, which has been started before the acquisition but has been accelerated after it, identifying the appropriate locations for particular activities, e.g. by consolidating all subsea activities in Stavanger which is a strategically relevant location for this business line. Emerson has brought in thorough planning procedures, new product development processes, demand planning, processes for operations etc. (Shanahan, 2011), which have enabled Roxar to build sharp focus on the key strategic issues, stay concentrated on the business and build alignment through the organization.

It is important to mention, that no major negative effect of Emerson's parenting on Roxar has been observed, which could otherwise be present if Emerson was to influence the processes if didn't have expertise of. This may be explained with the Emerson's approach of 'divisional autonomy', leaving the responsibility for the business processes to the company, and the guidance of the business and best practices in optimization of the processes - to the parent. According to Shanahan, Emerson believes that "people closest to the customers and technology can drive greatness", thus they are given the autonomy (2011).

Again, the main findings of the analysis by the Globalization Triangle model are summarized below (see Figure 22). Across every aspect different categories have been analyzed, following Yip (2003). Every aspect has been assigned a particular colour in accordance with its suitability to Roxar's global operations: green being the most appropriate, orange – less appropriate and red - inappropriate. It may be concluded that the company, in comparison to the situation before the acquisition, has strengthened many of elements, and importantly, has not experienced value-destroying influence from Emerson's side. In particular, Roxar can now much better exploit the cost advantages of global operations; it has become stronger in its global market participation and global value chain. Most importantly, Roxar has experienced major improvements in coordination of the competitive moves across different divisions of the organization, as well as in management processes, which have been achieved through implementation of Emerson's best practices in the areas of planning, forecasting, reviewing, and budget controlling.

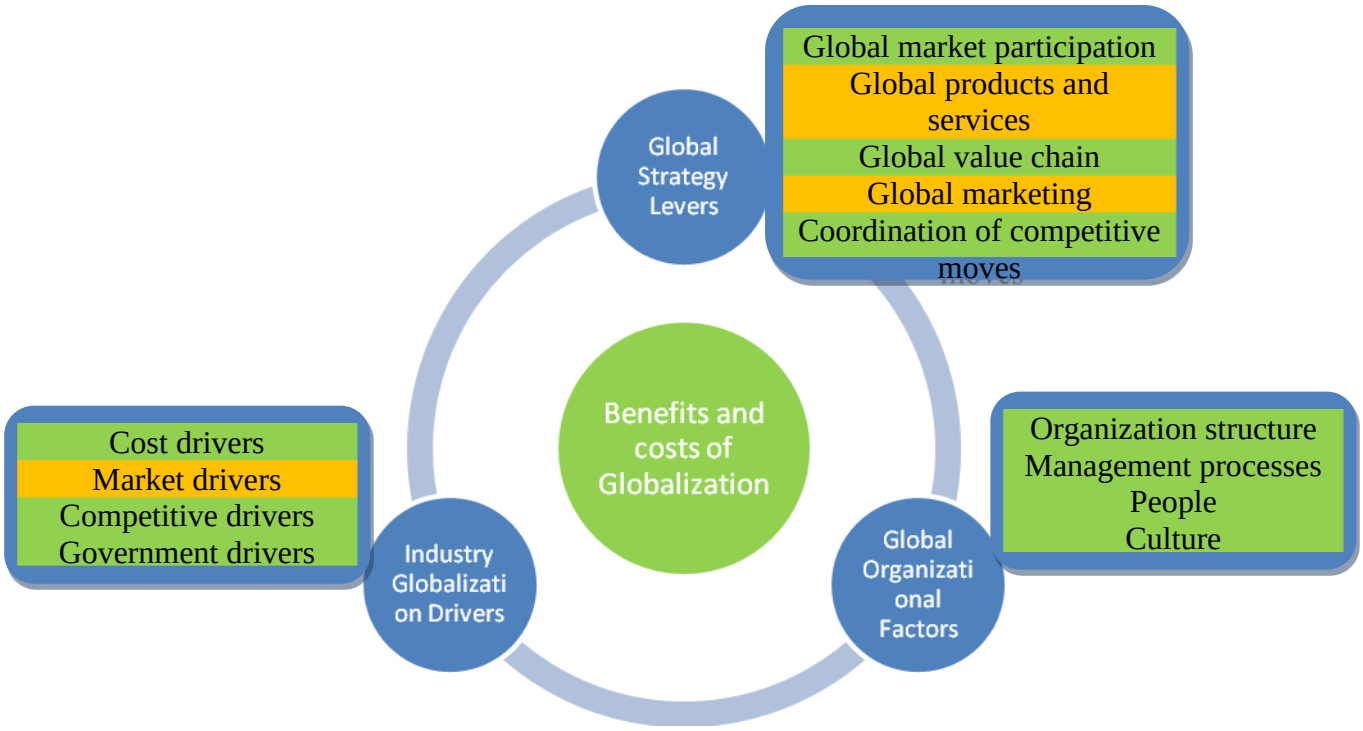

Figure 22. Roxar's Globalization Triangle after the acquisition by Emerson, based on Yip (2003).

Having identified the main changes in Roxar after the acquisition, we can now again look at the strategy type Roxar pursues. The evaluation of the appropriate degree of GI and LR is done again, identifying where Roxar stands after the acquisition by Emerson.

Global Integration vs. Local Responsiveness

Previously it has been concluded that Roxar pursued the international strategy, yet had potential to advance it in order to benefit more from the industry potential, opportunity to achieve cost reduction through relocating value chain activities and standardizing a range of products, and becoming stronger in meeting the international rivalry, as suggested by Fayerweather (1982), Fayerweather and Kapoor (1975), Porter (1986), and Yip (2003). Additionally, with the improved internal coordination and management processes, it may be argued that Roxar has been able to remove the internal forces for local responsiveness, which can be viewed as barriers for globalization of the company. With the standardization of topside products and potential in the future to standardize the subsea products, if the industry evolves in that direction, Roxar faces even weaker forces to local responsiveness (i.e. to customize product for every particular project), although still the requirement of maintaining close and personal relationships with its clients is in place.

Based on the changes observed across the Globalization Triangle, Roxar is now ready to exploit the benefits of the globalization, having a more appropriate structure and organization. The analysis of the effect on Roxar of the acquisition by Emerson provides evidence that Roxar has been able to become more global by serving a larger network of international clients through joining Emerson's sales network, utilizing cost advantages by relocating its value chain activities and adjusting its sourcing procedures, as well as engaging more in knowledge and information sharing through shared product development platform and by bringing more Emerson's divisions into subsea. Nevertheless, it is not expected that Roxar, being a rather small division within Emerson, could really pursue transnational strategy. This is due to the fact that most of the knowledge (best practices) comes in one direction – from Emerson's HQ to its businesses, including Roxar. Although Roxar has commenced knowledge sharing about subsea industry and technology with other divisions, the knowledge sharing across all aspects of the business, which is the main trait and advantage of transnational strategy, is not foreseeable. Based on that and following by Barlett and Ghoshal (1991), Roxar can be identified as a company pursuing global strategy (see Figure 23).

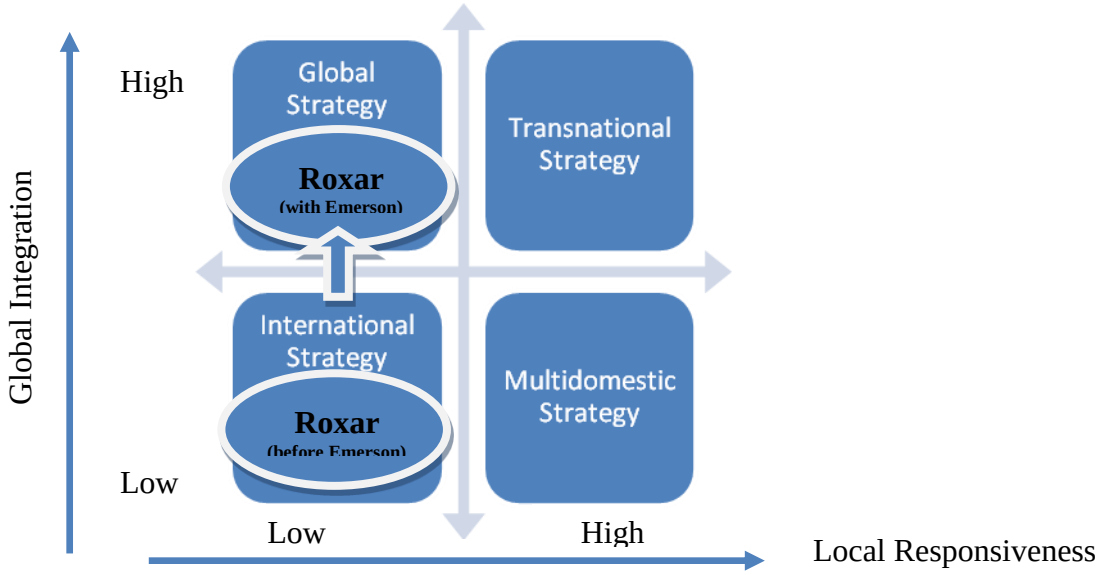

Figure 23. Roxar as a Type of MNC after the acquisition by Emerson, based on Barlett and Ghoshal (1991).

If Emerson, on its corporate level develops an integrated system of centres of excellence across businesses and/or vale chain activities and encourages knowledge sharing among them, transnational strategy type could be developed, which may bring benefit for the whole organization. Yet, it is doubtful that it could be achieved by any initiative from Roxar, and also it is out of the scope of this paper.

To conclude, we have found that the acquisition by Emerson created value for Roxar. As a part of MNC, Roxar has managed to neutralize its weaknesses and enhance its strengths, which in turn has improved its competitive position on a global scale. Although, extra work-load has been created for most of Roxar's employees, the changes have been admitted to be necessary for the company's long-term sustainability and success. Moreover, Emerson has avoided value destruction by not impacting areas where it lacks expertise or by excessive overhead costs. Emerson, as the new parent, has helped Roxar to improve its international strategy, leverage the potential offered by the industry and strengthen its competitive advantage.

6. Conclusion

The master thesis has answered the research question posed in the beginning of the research study: **How has the acquisition by Emerson affected Roxar**? In terms of that, two aspects have been investigated: the potential benefits of the acquisition of Roxar by Emerson and the realization of these benefits.

6.1 Potential Benefits

Potential benefits have been discussed from both the external and internal perspectives. Externally, Roxar faces myriad challenges which negatively influence company's profitability, yet, external opportunities can be spotted as well. Crucially, several barriers such as substantial capital requirements and proprietary technology among others prevent new players from entering the industry. The threat of substitutes is not apparent either. Overall, taking into account the analysis of industry's forces it has been concluded that by exploiting its resources efficiently, making continuous investments in R&D activities and having long-term relationships with its business partners, Roxar can sustain its competitive position without threatening new competition, at least in the medium run. Given the key characteristics of Emerson, the acquisition was expected to contribute to a better performance of these necessary activities. Concerning the globalization potential of the industry, it has been identified that the flow measurement sector stimulates Roxar to exploit the benefits of global operations such as cost advantages, stronger global market participation and others. Again, with Emerson being a globally present company, international cooperation could strengthen Roxar and make new markets easier to access.

Internally, before the acquisition Roxar had managed to develop VRIO R&C related to technology advancements, unique human capital, innovation capabilities and trustworthy reputation which clearly resulted in competitive advantages and strong position of the company in the global arena. Yet, financial resources and organizational capabilities of Roxar were not sufficient to respond to the external environment and sustain the market leadership. Apart from that, it has been found that insufficient organizational capabilities of Roxar also challenged the enterprise to optimize its value chain, both in primary and support activities. Particularly, the lack of corporate planning, the failure to introduce structured R&D activities, immature technology development platforms in addition to insufficient

experience in IP protection practice led to the inefficiencies within the company. These have been identified as yet other sources of parenting opportunities for Emerson. In terms of globalization, mainly due to lack of global strategy coordination aspects and structured management processes Roxar did not realize high potential for global operations in its industry. Being mainly based in Norway, the company operated as an international company, not utilizing the benefits of supplying both standardized and customized products, developing appropriate strategy coordination and integration systems and identifying centres of excellence across globally dispersed value chain activities.

To summarize, Roxar was in the situation when it needed to maintain its technological leadership in the market and simultaneously develop cost discipline and adapt its organizational structure and international strategy to the needs of globally evolving flow measurement sector. Based on the characteristics of Emerson, there was a reasonable fit between the companies and thus the potential of value creation through parenting advantage was present, making Roxar a Heartland business from the point of view of Emerson. Yet, due to differences between the companies, it was crucial to determine whether the value trap threat was prevented ex-ante, to avoid value destruction for Roxar after the acquisition.

6.2 Realized Benefits

The analysis of the ways how Emerson has ensured realized benefits after the acquisition identified four types of value creation, which as has been concluded has helped to fulfil the parenting opportunities Emerson faced when acquiring Roxar.

Through **stand-alone influence** Emerson has impacted Roxar's strategies and performance through application of various tools based on the goals developed mutually by Roxar and Emerson. Some of the most strategically important tools comprise coordinated product portfolio management practice, key business development initiatives and coherent guidelines where the business should be directed, cost discipline procedures, and upgrading of Roxar's management. All of that has resulted in significantly lower manufacturing costs, optimization of Roxar's operations, and development of the necessary organizational capabilities.

Concerning the **linkage influence**, Emerson has enhanced Roxar's value by establishing linkages between Roxar and other Emerson's businesses. This has led to synergies across

various areas, including such value chain activities as manufacturing, logistics, suppliers, sales channels, R&D and others. The changes introduced by Emerson through linkage influence are inferred to be highly appropriate for Roxar in terms of both enhancing cost competitiveness and creating solid business platform supported with shared value chain activities.

In the same vein, Emerson has managed to create a value through **functional and service influence,** the main areas being financing and HRM. Regarding the former, Emerson has given Roxar access to its sufficient funds, and has tightly incorporated financing in strategic planning and reporting, ensuring the effectiveness of the company's financial operations on a constant basis. In terms of HRM, Emerson has provided various training opportunities for Roxar employees, particularly in the areas of the ethics and prevention of conflicts of interests. This is of great importance for the company, since it experienced several cases of its prior employees showing disrespect towards Roxar's IP protection.

Regarding **corporate development influence**, the integration process of Roxar under Emerson's umbrella has been discussed. It initially concerned the corporate functions of the company, and only after Roxar's business model was carefully analyzed, introduction of the new structures and procedures through the entire organization took place. Such process, complemented with bringing in few Emerson people in the organization, ensured the smooth integration process, by that avoiding the value trap threat.

From the perspective of global strategy, Roxar has strengthened many of the elements after the acquisition, including better exploitation of cost advantages, global market presence, and coordination of the competitive moves across the organization amongst others, supported by Emerson's best practices in the areas of planning, forecasting, reviewing, and controlling. Concluding from that, Roxar can now be identified as a company pursuing global strategy, yet the potential to experience benefits from transnational strategy type exists which would allow a greater knowledge sharing within the company identifying several internal centres of excellence, however, it is now dependent on Emerson's, not Roxar's, corporate level strategic decision-making.

Overall, it can be concluded that the acquisition by Emerson created value for Roxar. By being a part of a large MNC, Roxar has managed to adjust its business model to the needs of internationally evolving flow measurement sector and become better at withstanding the

pressure of global market forces. Under the influence of Emerson, besides concentrating solely on technology, Roxar has become focused on cost management and efficient exploitation of sales channels and global network as well. Despite some tension among Roxar's staff which had to adapt to additional workload and initially seemingly-unnecessary procedures, it has been inferred that most of the changes have been justified, as they were needed in order for Roxar to be able to develop further. Crucially, Emerson has introduced changes in the areas where it is known to perform the best - strategic planning and cost control. Moreover, Emerson has succeeded at avoiding one of the main threats of parenting, namely value destruction through inappropriate influence, excessive overhead costs or changing or influencing areas where it lacks expertise or resources. It is important that Emerson continues such a smart approach of being an understanding parent avoiding unnecessary interference into Roxar's activities, thus not letting the company's potential value to be trapped. The analysis of particular case illustrates that MNCs can certainly have a positive impact on acquired companies, despite the differences in cultures, sizes and business models, if the appropriate parenting is in place.

6.3 Research Limitations

We would like to mention the following limitations of this thesis. First, only flow measurement division within Roxar, including subsea and topside equipment is analyzed in the paper. The above choice was made due to the fact that Software Solutions division and downwhole sector belonging to the flow measurement division of Roxar have not been as deeply impacted by the acquisition. Secondly, due to the choice of research methodology – intrinsic case study method, one can argue that the analysis conducted in the paper is based on the subjective data collected through interviews with people appointed by the company. Thirdly, interviews have been conducted only with top managers, yet middle and low levels of the company structure could provide a more trustful and wider perspective of the acquisition. Crucially, no interviews were conducted with Emerson top managers to get the insight on the acquisition from their perspective. Next, since the acquisition happened not so long time ago, it is rather difficult to evaluate if all the benefits or disadvantages are truly there as integration is still in process. And last, but not least in this paper we analyze one particular case of acquisition, which is not compared to other cases of acquisitions in the upstream oil and gas industry. This way we neglect the possibility of other factors, like path dependency or random factors, to have played a role in performance of the company.

6.4 Suggestions for Further Research

As for suggestions for the further research we recommend to take a broader perspective on the acquisition by analyzing the impact on the whole company, covering both Software Solutions and Flow Measurement divisions in Roxar. Moreover, it would be interesting to compare the case of Roxar's acquisition to other acquisitions made by Emerson, to identify whether synergies have been exploited to the fullest degree. Furthermore, it might be of a great interest to compare the case of Roxar's acquisition by Emerson to other acquisitions of Norwegian companies by MNCs in the upstream oil and gas sector, for instance, the case of MPM being acquired by FMC Technologies. Finally, we suggest comparing the acquisition of Roxar by Emerson to other acquisitions of small Norwegian companies by Norwegian corporations, to recognize any major differences concerning the post-acquisition practices which might be apparent.

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Appendix I: Interview Guideline

Theme I: Internal challenges for Roxar before the acquisition

1. What were your department's (Roxar's) most important resources and capabilities before the acquisition by Emerson?
2. What were their main competitive strengths and weaknesses?

Theme II: External challenges for Roxar before the acquisition

1. What were the main threats and opportunities for your department in relation to suppliers, customers as well as existing and potential rivals before the acquisition (i.e., industry competition)?
2. What were the main threats and opportunities in relation to foreign government, regulation, culture, religion, etc. (i.e., foreign "rules of the game")?

Theme III: International strategy of Roxar before the acquisition

1. How locally responsive and/or globally integrated were your department's (Roxar's) international activities at that time?
2. How did you manage to coordinate your international activities, e.g., using local agents, joint ventures or wholly owned subsidiaries?

Theme IV: Parenting advantage of Emerson

1. What were the main sources of synergy between your department (Roxar) and Emerson?
2. How has Emerson' central headquarters and international organization (global network) contributed to realizing such synergy potentials?

Theme V: Changes for Roxar after the acquisition

1. How has the acquisition affected your department (Roxar) with respect to resources and capabilities, activities, products and services, organization, location and strategy?
2. How has the acquisition affected your department's (Roxar's) international business in terms of local responsiveness, global integration, and worldwide learning?
3. What impact has the acquisition had on your department's (Roxar's) performance?
4. What are the main challenges facing your department (Roxar) now?

Theme VI: Changes for Emerson after the acquisition

1. How and to what extent has Emerson benefitted from the acquisition?
2. How has the post-acquisition integration of Roxar affected Emerson's international business?