

ROSEN Integrity Services

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16/06/2023

International Business

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Preface

"Veni, Vidi, Vici," or commonly known as "I came, I saw, I conquered," were the words Julius Caesar used to inspire himself during the battle of Alesia, where he turned challenges into opportunities. While the term "conquering" may not be the best fit for our modern age, the principle of growth remains the same. Every individual and company is faced with a choice: to evolve and thrive or to stagnate and decline. In today's highly competitive market, companies can only survive by continuously improving, adapting, and expanding their horizons.

When a company decides to expand its operations to new countries, meticulous preparation becomes paramount. Every decision, regardless of its magnitude, plays a crucial role in shaping the path to success. Market research becomes indispensable in understanding the dynamics and characteristics of the target country. In this report, we draw inspiration from the art of warfare as a metaphor, as the strategic mindset it embodies is highly applicable to the growth and development of companies.

The purpose of this report is to provide valuable advice to ROSEN, a renowned pipeline consultancy service company, as it endeavors to expand its business value into the European market. Our team, Group One, is honored to have the opportunity to collaborate with ROSEN, a company that offers a wealth of promising learning experiences for students. With passion and enthusiasm, we have crafted this report, aiming to support ROSEN's growth aspirations and contribute to its continued success.

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2 Executive Summary

Currently, ROSEN is looking into expanding their asset integrity assessment and consultation services to Spain and Italy in three different aspects. The first area is offshore, where ROSEN is currently not present in either of these countries. The second area is hydrogen. Pipelines currently used for oil and gas can be transitioned into hydrogen usage in the future and ROSEN wants to integrate themselves in that process. The third area is NIMA, an asset integrity management software that ROSEN wants to advertise more heavily to the Spanish and Italian market. They are currently unsure how feasible and profitable these actions would be.

To target these problems, the central research question: “How can ROSEN Europe better position its engineering and consulting services in Italy and Spain with regard to NIMA, hydrogen, and offshore?” was formulated.

Our recommendations for ROSEN are divided into the areas of offshore, hydrogen and NIMA. For Hydrogen it was recommend that ROSEN does in-depth research to understand the market better, differentiate their offering, and generate more leads. For Italy specifically, it was recommend attending and hosting business conferences and conducting Case studies specifically related to hydrogen pipeline consultancy services. Furthermore, it was recommend leveraging digital marketing, specifically with newsletters and data-driven marketing, to build strong relationships with customers and suppliers as well as stay ahead of industry trends and regulatory changes and seek partnerships and collaborations.

For their Offshore services in Italy, it was advised for ROSEN to connect back to their past in Italian offshore by leaning into its quality reputation and track record and partnering up with companies they worked with before. It was recommended that they invest in a network to mar to and consider contractors to stay flexible for potential changes and assist in the beginning stages. Due to the unfavourable political climate, potential legal changes and a negative social environment, it was not recommended that ROSEN invests into the Spanish offshore market.

Furthermore, regarding NIMA, it was recommended that ROSEN pursues additional certification, partners up with relevant companies like oil and gas companies or pipeline operators and manager, research institutes and universities as well as governmental and environmental organisations. In Spain Enagás was specifically emphasized, the technical manager of the gas pipeline system in pain as a potential Partner. Additionally, the marketing should be specifically to the targeted market, meaning in Spain having Spanish documents and employees and publishing content relevant to the Spanish market. For the Italian market, It was recommended to enhance the SAAS model, implement a partnership model and more local and regional marketing practices.

3 Introduction

This research project is carried out in the context of ROSEN Group. The ROSEN Group is the global leader in the field of integrity process chains and provides its customers with advanced solutions. The company is a privately owned family business, has a workforce of nearly 4,000 employees operating in over 120 countries and was founded over 30 years ago ("ROSEN - We Can," n.d.). They are committed to delivering on their promise of "Empowered by technology" by improving their customers' operations to make them safer, more cost-effective, and more efficient. ROSEN provides the necessary expertise and technology to ensure that its customers comply with legal standards, protect people and the environment, and maximize their profits from various assets such as pipelines, tanks, vessels, wind turbines, trains, and telecommunication towers (ROSEN Group, n.d.). The services ROSEN offers are in the area of inspection and integrity solutions as well as solutions regarding research and development. Their products consist of sensors and data acquisition of which 85% are made in-house. Custom Software solutions are also offered ("ROSEN - Why ROSEN," n.d.). Additionally, they are experts in project management ("ROSEN - Project Management," n.d.).

After starting with an internal analysis, this research project will focus on three parts of ROSEN's operations. Firstly, this report will look at ROSEN's hydrogen services, the second part will be about NIMA, a framework for decision support. Both will be done in regard to the market in Spain and Italy, which will also be examined in regard to the current market status and possible competitors. Finally, offshore services will also be investigated for the level of potential. Based on this, the question is how ROSEN can better position its integrity consulting services in Italy and Spain.

3.1 Reading Guide

Hydrogen Services:

This chapter delves into the Italian and Spanish hydrogen markets, marketing strategies employed by ROSEN, and an analysis of the competitive landscape. Look for insights into the dynamics of the hydrogen market, potential opportunities, and challenges. The chapter concludes with a summary and strategic recommendations for ROSEN Europe in the hydrogen market.

Offshore Services:

This chapter focuses on the offshore gas market in Italy and Spain, providing a PESTLE analysis and a cultural overview through Hofstede's cultural dimensions. The section concludes with an understanding of ROSEN's market position, marketing strategy, and revenue model in these markets.

NIMA Services:

This chapter analyzes the potential of implementing the NIMA system in Italy and Spain. It provides a PESTLE analysis, details of the current market stakeholders, Porter's four forces analysis (excluding bargaining power of suppliers), identification of opportunities and threats, local regulations, and insights into ROSEN's current marketing practices.

Conclusion:

This section wraps up the report, summarizing the key findings from each chapter and their implications for ROSEN Europe. The conclusion should bring together the key insights and provide a clear picture of the report's findings as a whole.

Recommendations:

At the end of each chapter which discusses a service offered by ROSEN, there is a recommendations section which offers actionable advice based on the report's findings. These recommendations are designed to guide ROSEN Europe in its strategic planning and decision-making processes. Reading this section will provide a clear understanding of the practical implications of the report's research.

4 Hydrogen Services

4.1 Introduction

In the context of the global energy transition, hydrogen is increasingly being recognized as a key element in the move towards a more sustainable, low-carbon future. This shift is creating a new landscape of opportunities and challenges for companies like ROSEN Europe, which offers consultancy services for pipeline repurposing for hydrogen use.

This chapter offers a comprehensive exploration of the Italian and Spanish hydrogen market, with a particular emphasis on the dynamics that could significantly influence ROSEN Europe's strategic positioning. The analysis covers a broad range of factors that could shape the hydrogen market. Furthermore, the chapter delves into the current marketing strategies employed by ROSEN in the hydrogen sector, providing insights into the tactics for reaching potential clients, converting interest into business, and fostering long-term relationships.

The chapter also presents a thorough analysis of the competitive landscape, examining aspects such as the number of competitors, market growth, product/service differentiation, and brand reputation. It further explores the bargaining power of suppliers and buyers, the threat of new entrants and substitutes, and the overall industry trends and regulatory changes.

The objective of this analysis is to equip ROSEN Europe with the necessary knowledge and insights to navigate the complexities of the emerging hydrogen market. By understanding the market's nuances and trends, ROSEN Europe can make informed decisions, optimize its service offerings, and effectively contribute to the broader transition towards a hydrogen-based energy system.

4.2 Current Market

In the ever-evolving business environment, organizations, especially those who strive to expand their market to new countries, shall face a multitude of external factors that can significantly impact their operations and success. To navigate these complexities effectively, tools like PESTLE analysis is utilised. PESTLE stands for Political, Economic, Social, Technological, Legal, and Environmental factors, and this analysis provides a comprehensive framework for assessing the external macro-environmental factors that influence a business. By conducting a PESTLE analysis, ROSEN can gain valuable insights into the broader forces shaping their industry and operating environment. This enables them to identify potential opportunities and threats, anticipate changes, adapt their strategies, and ensure long-term sustainability and growth. In an era where businesses operate within a rapidly changing global landscape, PESTLE analysis serves as a vital tool for ROSEN to proactively address external challenges and capitalize on emerging trends (PESTLE Analysis, 2023).

Spain

Political

Spain's political situation regarding hydrogen energy is largely supportive of the development of a hydrogen economy. The country's National Integrated Energy and Climate Plan (PNIEC) sets ambitious targets for reducing greenhouse gas emissions and increasing the use of renewable energy, including hydrogen. The plan calls for 4 GW of electrolyser capacity by 2030 and an additional 4 GW by 2040 (Platts, 2020), which would make Spain one of the leading producers of green hydrogen in Europe.

To support the development of the hydrogen market, the Spanish government has launched several initiatives. One of these is the Hydrogen Roadmap Spain 2018-2030, which sets out a series of actions to promote the use of hydrogen in various sectors. For example, the roadmap calls for the deployment of 5,000 fuel cell vehicles by 2030 and the construction of 20 hydrogen refuelling stations by 2020 (Strockl, 2021). In addition, Spain is a member of the European Union, which has set ambitious targets for reducing greenhouse gas emissions and increasing the use of renewable energy. This could drive demand for hydrogen in Spain and create a favourable regulatory environment for the hydrogen market.

However, the political instability in Spain in recent years may cause uncertainty for investors and delay the implementation of hydrogen-related policies. The country has undergone various changes in government, leading to the possibility of policy changes and a lack of consistency in the regulatory environment. This could make it challenging for companies to plan and invest in the development of hydrogen infrastructure.

Overall, while there are some potential political challenges for the development of a hydrogen economy in Spain, the country's government has shown a strong commitment to the technology. The PNIEC targets and the various incentives provided by the government demonstrate a willingness to support the growth of the hydrogen market. If Spain can maintain a stable regulatory environment, it has the potential to become a leader in the production of green hydrogen in Europe.

Economical

Spain's economic situation regarding hydrogen energy can be seen as a mix of opportunities and challenges. On the one hand, Spain has strong potential for developing a hydrogen economy due to its abundant renewable energy resources, particularly solar and wind power. Spain's location on the Iberian Peninsula also makes it a strategic hub for hydrogen transport and distribution between Europe, North Africa, and the Middle East. Moreover, Spain has a strong industrial base with expertise in sectors such as energy, chemicals, and transportation, which could facilitate the development of hydrogen-related technologies and applications. The government has even identified hydrogen as a key area for economic growth and job creation, and the country has set ambitious targets to become a leader in the development and deployment of hydrogen technologies, with the government having committed to investing €8.9 billion in the development of green hydrogen projects over the next decade (Vermeulen & Campuzano, 2021).

However, the development of a hydrogen economy in Spain faces several challenges. The high cost of hydrogen production and the lack of a well-developed hydrogen infrastructure are major barriers to the growth of the industry. In addition, the competitive landscape is rapidly evolving, with other European countries and regions investing heavily in hydrogen technologies.

Furthermore, Spain's current economic situation and fiscal policies could also have an impact on the growth of the hydrogen market. The country has been facing high levels of public debt and unemployment, which could limit government investment in hydrogen-related projects and infrastructure. At the same time, Spain's energy sector is highly regulated and subject to government intervention, which could create uncertainties for private investors and hinder the adoption of new technologies and business models.

Despite these challenges, the Spanish government is taking steps to support the growth of the hydrogen industry, and along with the presidents of France, Portugal, and the European Commission, has begun to discuss the H2Med energy interconnection project, which aims to create the first green corridor to connect the Iberian Peninsula with Marseille, France. The project will focus on

transporting green hydrogen and is expected to cost €2.85 billion. The section between Celorico, Portugal, and Zamora, Spain, is estimated to cost €350 million, and the Barcelona-Marseille section is estimated to cost €2.5 billion. The project is expected to be presented as a Project of Common Interest before Dec. 15, 2023, which would give the developer access to European funding sources. The infrastructure is expected to be operational by the end of this decade and capable of transporting 10% of the EU's hydrogen consumption by 2030, around 2 million tons per year (H2Med Project, 2022).

Social

The social attitude towards hydrogen in Spain is generally positive, with increasing awareness and interest in hydrogen energy among the population. There is a growing concern about climate change and the need for cleaner energy sources, which has led to a greater interest in renewable energy technologies such as hydrogen.

Additionally, the Spanish government has been actively promoting hydrogen as a key component of its energy transition strategy, which has helped to increase awareness and interest in the technology among the general public. There are also various educational and outreach programs in place to raise awareness of hydrogen and its potential applications.

However, there are still some challenges and misconceptions that need to be addressed. For example, some people may view hydrogen as a dangerous fuel due to its high flammability, which can create safety concerns. Additionally, there may be a lack of understanding about the different types of hydrogen and their production methods, which can lead to confusion and skepticism about the technology.

Overall, the social attitude towards hydrogen in Spain is positive, with increasing awareness and interest in the technology. However, there is still a need for education and outreach programs to address misconceptions and promote a greater understanding of hydrogen energy.

Technological

The technological situation regarding hydrogen in Spain is evolving rapidly. Spain is investing heavily in developing technologies related to hydrogen energy, including fuel cells, hydrogen production, and storage. The country has several research centers and institutes focused on hydrogen energy and has also established several pilot projects to test hydrogen fuel cell technology.

Spain is also investing in the development of hydrogen storage technologies to support the use of renewable energy sources. The Spanish National Hydrogen Center (CNH2) is conducting research on advanced hydrogen storage technologies, including metal hydrides and carbon materials. In addition, Spanish energy company Endesa is collaborating with Enagás to develop a 20 MW green hydrogen production plant in Mallorca, which will be powered by a 50 MW solar PV plant and use proton exchange membrane (PEM) electrolysis technology (Enagás and Acciona, 2020).

The country also has experience in building and operating gas pipelines, which could be leveraged for the development of hydrogen pipelines. Additionally, Spanish companies have expertise in manufacturing and supplying pipeline equipment and technology. For example, SENER is a Spanish engineering company that designs and builds pipelines and storage facilities for the oil and gas industry, and it has recently expanded its operations to include renewable energy technologies such as hydrogen (Hydroegn and Carriers, 2022).

Spain's technological capabilities in the field of hydrogen are supported by a strong research and development infrastructure. In addition to the CNH2, there are several universities and research

institutions across the country conducting research on hydrogen technology. The Spanish government also provides funding for research and development in this field, including through its National Plan for Scientific and Technical Research and Innovation.

Legal

Spain's Hydrogen Roadmap, as previously mentioned, sets out a regulatory framework to promote the development of the hydrogen sector in the country. The roadmap emphasizes the importance of the role of government in providing a stable and predictable regulatory environment to attract private investment in the hydrogen sector. The regulatory framework outlined in the Hydrogen Roadmap includes measures to promote research and development, support for infrastructure development, and regulatory incentives to encourage the use of hydrogen in various sectors.

One of the key measures to support hydrogen infrastructure development is the creation of a legal and regulatory framework for hydrogen pipelines. The roadmap calls for the development of a national hydrogen pipeline network, and establishes guidelines for the construction, operation, and maintenance of these pipelines. The framework aims to ensure that hydrogen pipelines are built to the highest safety standards, and that they are operated in a way that minimizes the risk of accidents.

In addition to pipeline regulations, the Hydrogen Roadmap also outlines measures to promote the use of hydrogen in various sectors. For example, it proposes regulatory incentives to encourage the use of hydrogen in the transport sector, such as tax exemptions for zero-emission vehicles, and the establishment of a regulatory framework for hydrogen refueling stations.

Health and safety regulations are an important aspect of hydrogen production in Spain, as hydrogen is a highly flammable and explosive gas. In order to ensure the safe production, transport, and use of hydrogen, there are various regulations in place in Spain. One of the main regulations governing the production of hydrogen is the Royal Decree 220/2018, which establishes the basic safety requirements for the handling of flammable gases. This decree requires that all hydrogen production facilities comply with strict safety regulations, including the use of certified equipment, adequate ventilation, and regular inspections and maintenance.

In addition, there are specific regulations regarding the transport of hydrogen, such as the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) and the International Maritime Dangerous Goods (IMDG) Code. These regulations require that hydrogen be transported in specialized containers and that transport vehicles and vessels meet specific safety standards.

This regulatory framework outlined is designed to be flexible and adaptable, in order to respond to changes in the hydrogen market and technology. The roadmap emphasizes the importance of ongoing dialogue between government and industry stakeholders to ensure that the regulatory framework remains relevant and effective over time.

Environmental

The environment can have a significant impact on hydrogen energy production in Spain. One of the main environmental concerns is the source of hydrogen production. Currently, the majority of hydrogen production in Spain comes from natural gas, which is not a sustainable or renewable source of energy. The production of hydrogen from natural gas also results in the emission of greenhouse gases, which contribute to climate change.

However, Spain is well-positioned to produce green hydrogen due to its climate and geography. The country is known for its sunny weather and strong winds, which are ideal for renewable energy production. Spain is also home to vast areas of land that are well-suited for the installation of wind turbines and solar panels. In addition, Spain has a significant coastline that can be used for offshore wind power generation. The country is currently developing several large-scale offshore wind projects, which could help to increase the production of green hydrogen.

Furthermore, the country has significant experience in the field of renewable energy, having invested heavily in solar and wind power over the past decade. This experience and expertise can be leveraged to develop a robust and efficient hydrogen energy industry. Overall, Spain's favourable climate and experience in renewable energy production make it well-positioned to become a major producer of green hydrogen.

Italy

This section covers every aspect of the PESTLE analysis with Italy as the base analysis country. Political aspect of Italy related to the hydrogen market will be covered with therein political stability will be firstly included and then followed by the trade policies regarding hydrogen integrity service. The economical aspect of the model will discuss the possible area in Italy's economical situation that would affect the business model of the hydrogen integrity service such as: inflation rates and economic growth. The social aspect describes the target demographics ROSEN could possibly has in Italy relating to their service product. The technological aspect refers to the technological awareness of the possible market segment in regard to Hydrogen integrity service. Copyright protection under the legal aspect will be discussed in this section as it could help ROSEN protect its idea such as in the form of IP (intellectual property). Lastly, the environmental aspect covers organisational awareness such as the pressure put by NGO regarding sustainability.

Political

Italy is currently governed by a right wing party populist Brothers of Italy Party, a far-right league with Giorgia Meloni as their prime minister. The new government is expected to continue to focus on post-pandemic economic recovery and implementation of the National Recovery and Resilience Plan (trade.gov, 2022). In 2021, The previous Italian government had targeted a penetration in final energy uses of 2% by 2030 and then up to 20% in 2050 in regard to the use of hydrogen as energy. They also had projected that green hydrogen become market-competitive within a decade although with regard to assess how much electricity, land and water it will require.

In 2022, The currently winning hosting governmental party has only been showing little insight toward their strategy regarding alternative energy. During their campaign, the three leaders of the party focused on nuclear power as the way to give Italy more energy independence and reduce dependence on Russian gas (Keating, 2022). However, this year early February 2023, prime minister Giorgia Meloni has stated that Italy intends to use funds coming from the European Union under the so-called REPowerEU, a plan to rapidly reduce dependence on Russian fossil fuels and fast forward green transition (European Commission, 2022), to completely wean itself off Russian gas and turn the country into energy hub for the bloc (euractiv.com, 2023).

Meloni also stated that the funding could be also aimed at building southH2 Corridor which links to bring hydrogen that would be produced in northern Africa to northern Europe. Furthermore, a delegation led by right-wing Meloni to Algeria last January has signed agreements which include increasing the transport of energy to Italy and building new gas pipeline that will also allow the transport of hydrogen (euractiv.com, 2023).

Economical

The Italian economy is the eight largest in the world and third largest in the EU with a GDP of \$2.1 trillion in 2021 (trade.gov, 2022). After a 9% contraction due to the pandemic in 2020 it has had a rebound with the GDP growing 6.7%, which has exceeded pre-pandemic levels. In 2023, the economy is expected to grow albeit under 1% in 2023 consequently because of Russian's war against Ukraine which causes energy prices to spike (trade.gov, 2022).

The Ministry of Economic Development forecasted that up to €10bn of investments will be required between 2020 and 2030 to launch a low-carbon hydrogen economy in Italy. According to WFW, an energy transport law firm based in London, Italy represents a highly attractive market for the development of green hydrogen due to its extensive existing renewable energy assets and country-wide gas transport networking which allows the dissemination of 'power to gas' (P2G) technology based on the storage of surplus electricity produced by either solar, wind or hydraulic power plants in the form of methane or hydrogen. Furthermore, the central location in the Mediterranean is ideally suitable for Italy to become a hub for the hydrogen trade as it is between potential huge exporters in Africa and Middle east and consumers in northern Europe. (Watson Fairley & Williams, 2021). This means that the hydrogen market is in favour in the aspect of the economical area of Italy as their main plan to be the hub between energy exporter and consumers of hydrogen energy will required a lot of asset integrity and checking.

Social

Italians are conscious of the behavioural shifts that need to occur to tackle climate change. According to one third of the population, individual lifestyle changes that will help climate saving. 75% according to the surveys done by Europe Investment Bank says that climate policies will improve the quality of life and that green transition will be a source of economic growth. Their view about jobs is also heavily impacted by their opinion regarding the green solution as 34% feel they could lose jobs if their function does not mitigate and compatible with the need of climate change. This figure is among 20 – 29 years old (EIB, 2022).

Technological

Looking at Italy's global innovation index, the latest value from 2022 is 46.1. in comparison, the world average in 2022 based on 128 countries is 32.09 points. Global innovation indexes capture elements of the national economy that enable innovative activities such as: institutions, human capital and research, infrastructure, market sophistication and business sophistication. (theglobaleconomy, 2023). as the third largest EU economy, Italy's progress in the digital transformation over the coming years is crucial to enable the EU as a whole to reach the 2030 Digital Decade targets. This shows how Italy's rapid development in innovation is going. Italy is notably catching up at a remarkable pace as can be seen in the recent years that digital issues have been gained political traction with the establishment of a ministry responsible for digital affairs, the adoption of several key strategies and the launch of many policy measures (European Commission, 2022).

According to CMS, the hydrogen market technology is still at an early stage in 2019. Nevertheless, it is at the heart of the Italian new green deal given its huge potential in terms of decarbonisation and exploitation of renewable energy. In recent years, the Italian government and companies have invested in research and innovative projects to boost the development of new hydrogen-related technologies. Italy is therefore one of the leading countries in Europe in terms of research in hydrogen sector, with 128 projects financed by the European Commission in the period 2008 – 2017, involving over 80 Italian beneficiaries and mobilising over €90M funding (Ciminelli, 2021).

Concluding the technology sector, Italy is quite advanced in its technological development and as both government and the society are concerned regarding the environmental sustainability, they invest a lot in the hydrogen technologies development.

Legal

The Italian government has been encouraging companies to have an overall strategy to protect their Intellectual Property (IP). The IP regulation system in Italy enforces that rights must be registered and enforced in Italy under local laws. For this reason, a U.S trademark registrations, design or utility patent titles will not be protected in Italy without further administrative procedures at the corresponding regional (EU) or local level. (trade.gov, 2022)

Regarding the hydrogen market, the European Commission has approved a €450 million Italian scheme to support the production of renewable hydrogen with the main goal to foster the shift to a net-zero economy, in line with the green industrial plan. Italy notified the Commission that a €450 million scheme is integrated in production of both renewable hydrogen and renewable electricity in brownfield industrial areas to foster the transition to a net-zero economy. The measure that is financed under the recovery and resilience facility will be open to companies of all sizes in Italy with the exception of credit and other financial institution. The Commission has therefore found that the Italian scheme is in line with the conditions set out in the Temporary Crisis and Transition Framework. They concluded that this scheme is necessary, appropriate and proportionate to accelerate the green transition and facilitate the development of certain economic activities, which are crucial for the implementation of the REPower EU plan. (Europe Commission, 2023)

Italy's legal system support the transition of using the green energy such as hydrogen. However, there are still challenges regarding Italy's desire to shift toward green energy. One of the challenges takes the form of legal framework. Italian legal framework regulating hydrogen production, operation, and connection is rather fragmented and often this has proven to be a barrier to the development for new projects. To mention an example, despite the authorisation process regarding the hydrogen production is set at national level, local public authorities might still ask for different requirements with regard to the land use. Some relevant issues is the lack of a clear distinction, in terms of authorisation procedures, like between:

1. The production of hydrogen for industrial use obtained through reinforcing progress
2. The production of green hydrogen obtained through electrolysis process.

Currently, the Italian environmental authorities does not distinguish these two processes with the result of imposing the same level of restrictions even though the electrolysis is more similar to an electrical reaction rather than a chemical process like reforming. Therefore, a specific legislation for hydrogen production by electrolysis is highly desirable so that the simplification of authorisation is earned for procedure and to encourage investments in this specific low carbon sector. (Ciminelli, 2021)

Environmental

Italy has faced important environmental challenges, such as climate change mitigation, climate change adaptation, urban air quality, waste management, ground water pollution, ground water exploitation and hydro-geological instability (European Environment Agency, 2020). Italy therefore has adopted the European emissions trading system. They also have promoted energy-saving measures, renewable energy, and low-environmental-impact fuel in the transport sector (European Environment Agency, 2020).

Italy's specific issues lies more in their susceptibility to hydro-geological instability. This is caused by their geological and geomorphological characteristics, the impact of weather and climate factors, and the widespread, uncontrolled presence of human activities (European Environment Agency, 2020). Hydro-geological instability refers to all phenomena that compromise the soil and, consequently, artifacts and urban centres. Examples of phenomena of this type are soil erosion, landslides and floods. From this specific issues of Italy's geographical nature, one can conclude that the market of hydrogen integrity assessment will be required much.

4.3 Current Marketing Strategy

In the dynamic and competitive world of digital marketing, having a clear and effective strategy is crucial for businesses to thrive. To achieve success frameworks like RACE (Reach, Act, Convert, Engage) are becoming more popular. The RACE framework provides a practical and structured approach to marketing planning and execution. It helps businesses assess their current marketing strategy, identify areas of improvement, and adapt their tactics to achieve their goals. For ROSEN, utilizing the RACE framework would be particularly valuable when expanding to new markets such as Italy and Spain. By applying the RACE framework, ROSEN can evaluate their existing digital marketing efforts, identify the most effective channels to reach their target audience in these markets, create engaging content that resonates with local customers, and optimize their conversion strategies to drive meaningful results. The RACE framework serves as a valuable roadmap for ROSEN to navigate the complexities of digital marketing and ensure their expansion efforts in Italy and Spain are well-informed, strategic, and successful (Chaffey, 2022).

Reach

In this stage the business seeks to increase its visibility and raise awareness of its brand, products, or services. The main objective here is to reach a large and relevant audience through various marketing channels. For ROSEN, it involves promoting its hydrogen pipeline integrity and conversion consultancy services to potential customers in the energy industry. This is done through the generation and sharing of articles on the hydrogen market and its feasibility (Martinez, 2023). ROSEN experts conduct their own research on these topics and through these articles and publications, ROSEN positions itself as a powerhouse of thought leaders in the, drawing the attention of energy providers and pipeline operators. This is an effective strategy for such a young and expertise intensive sector.

However, ROSEN is not leading in the area of SEO when it comes to their publications and information on the topic of pipeline conversion. Using keywords such as "hydrogen Pipeline", "Pipeline conversion" and "Pipeline repurposing", ROSEN does not appear in the top results. Instead, for nearly all searches, one of the biggest competitors in this sector, DNV, has top listed articles. This presents an issue for ROSEN as they are not maximizing their visibility.

Act

Also known as the interaction stage, 'Act' is about getting the audience to interact with the business and its content. ROSEN does this best through conferences. They host and attend events which cover the topics of the future of the hydrogen market and the best practices when repurposing pipelines (Martinez, 2023). By having company experts as speakers, they again position themselves as thought leaders. However, in this stage they are interacting directly with potential leads and providing them with the answers to their questions which allows for leads to gain confidence in the companies capabilities.

Convert

At this stage, the company focuses on turning potential customers into actual clients. They showcase the value of their services through case studies and client testimonials. According to internal sources, ROSEN excels at providing customized solutions tailored to each client's specific requirements. They conduct detailed assessments of existing pipeline systems, including material compatibility, structural integrity, and safety considerations. Based on these assessments, they develop comprehensive feasibility studies that address technical challenges and provide actionable insights. ROSEN's team of experts collaborates closely with clients to design optimized conversion plans that meet their unique goals, ensuring efficient and safe hydrogen pipeline infrastructure. They leverage their extensive experience and knowledge in hydrogen conversion to create cost-benefit analyses, demonstrating the financial advantages of conversion, such as reduced maintenance costs, improved operational efficiency, and compliance with environmental regulations.

However, it has been observed internally that due to the industry being in such early stages, the regulations are not yet consistent across markets and often are not based on best science, resulting in clients being uneducated and unaware of what their needs really are as there is no firm benchmark set by the governments. The outcome of this is that competitors of ROSEN are offering conversion consultancy at a much lower price and simply not providing large parts of what should be considered standard practice. This has an impact on ROSEN's ability to sell as the clients do not understand why ROSEN is charging so much more for a service which they believe is the same (Martinez, 2023).

Engage

The objective of the final stage of the RACE strategy is to maintain and build relationships with customers. ROSEN does this by placing a strong emphasis on ongoing communication and engagement with their clients. They establish transparent channels of communication, and keep clients informed throughout the pipeline conversion process. Regular progress reports, meetings, and post-conversion support ensure that clients are engaged and have a clear understanding of the project's status. ROSEN values feedback from their clients and actively seeks testimonials. By maintaining open dialogue and addressing any concerns or questions promptly, they build strong and collaborative relationships with their clients (Martinez, 2023)

4.4 Market Position

In today's highly competitive business landscape, understanding the dynamics of the industry in which a company operates is crucial for developing effective strategies. One valuable tool that assists in this endeavour is Porter's Five Forces model. Developed by renowned Harvard Business School professor Michael E. Porter, this model examines five key competitive forces that shape an industry, providing valuable insights into its strengths and weaknesses. By applying Porter's Five Forces analysis, companies like ROSEN can gain a comprehensive understanding of both Italian and Spanish market and its competitive landscape, to identify potential threats and opportunities, and eventually to formulate strategies to achieve long-term profitability. This model's versatility makes it applicable to various sectors of the economy, enabling companies to make informed decisions and adapt their corporate strategies accordingly (Scott, 2023).

Industry Rivalry

In this force, the intensity of competition in the industry will be discussed. Understanding these market dynamics will provide an insight into how the company can best position themselves.

Number of Competitors:

The competitive landscape in the hydrogen pipeline repurposing consultancy space includes numerous firms, ranging from large multinationals such as DNV to smaller specialized engineering firms. This wide spectrum of companies implies a diverse range of strategies, approaches, and service levels, which could potentially complicate the competition dynamics for ROSEN. However, this diversity may also provide opportunities for the firm to distinguish itself, particularly through technical superiority, industry experience, something which they have lots of.

Market Growth:

The surging interest in green hydrogen as a key component of the energy transition is driving the expansion of the hydrogen economy at a fast pace. Policymakers globally are viewing hydrogen as a promising tool to achieve decarbonization goals, leading to an increase in hydrogen-related projects and consequently, the demand for consultancy services in this area. This rapid market growth is likely to attract new players, thereby intensifying competition. At the same time, it may also offer ROSEN opportunities to scale and further establish its market presence.

Product/Service Differentiation:

The highly specialized nature of “hydrogen pipeline repurposing consultancy services” offers some degree of inherent differentiation. Each company will have a unique blend of expertise, experiences, methodologies, and tools. ROSEN Europe can leverage its proven track record in providing such services to stand out. However, it is crucial for the company to continuously advance its methodologies and tools, build upon its expertise, and stay updated with the latest trends and developments in the hydrogen sector to ensure its services remain relevant and superior.

Brand Reputation:

Being a recognized and established brand in the energy sector, ROSEN possesses a significant advantage over newer, lesser-known competitors. Clients are more likely to entrust critical pipeline repurposing projects to a company with a strong reputation for quality and reliability. However, the company must consistently meet and exceed client expectations to protect and enhance its reputation. Any missteps could potentially erode its competitive position.

Italy

This section refers to the possible competitors that ROSEN possible would face in Italy. These companies are included in this report as they have a relatively strong presence in the Italian market in the direction of consultancy services.

Saipem

The first relevant competitor is a 66 years old advanced technological and engineering platform mainly operate and present in almost every Oil & Gas market around the world (Saipem, 2023). It is therefore safe to say that Saipem is an Italian based-multinational oilfield services company. Saipem provides engineering, procurement, project management and construction services with the design and execution of both offshore and onshore projects. Their offshore activities include platforms, marine terminals, pipelines and the development of deepwater fields. Their onshore activities focus on the laying of pipelines and installation of plant, equipment and the floaters. The drilling business units carries out drilling programs in the onshore and offshore environments globally (investing.com, 2023). They have been operating in more than 60 countries (Saipem, 2023). This company is chosen as it is a big company where they operate in the same industry as ROSEN which is the energy industry. The most distinguishable comparison is that ROSEN specialises in inspection, integrity and risk management services and Saipem offers a slightly more comprehensive services such as

engineering, procurement, construction, installation, and project management for offshore and onshore oil and gas projects.

Now relating to the hydrogen, even though Saipem is mainly focused in oil & gas market operations, they have been engaged in the adoption of hydrogen energy as they are sure this will surely help both Italy and the EU reach their climate neutrality targets by 2050. In 2021, Saipem and Alboran Hydrogen signed a memorandum of Understanding for the joint development of Puglia Green Hydrogen valley project. This project marks one of the first initiatives for the production and large-scale transport of green hydrogen in Italy (SAIPEM, 2023). ROSEN might differentiate by its specialisation in the integrity management as Saipem is more comprehensive, this could mean that they do not highly specialised in one particular service. Furthermore, Saipem is actively participating in different projects in pursuit of sustainable solutions for the energy industry. In Istrana, Italy, Saipem collaborate with Snam and Baker Hughes to work on operational tests. These tests were experimenting with the use of hydrogen as a fuel to power the gas turbines of this plant. The company's assignment was to manage the design of the integration between the assets of the plant and the systems and temporary treatment package required for the test, as well as the technical management, and safety coordination of all the companies involved during the preparation and execution of the tests (Cavcic, 2023).

Bureau Veritas

Another potential direct competitor to ROSEN in Italy is Bureau Veritas, an Antwerp originated multinational company that has been helping its clients to improve their performance by offering service and innovative solutions in order to ensure that their assets, products and infrastructure and process meet the standards and regulations in terms of quality, health and safety, environmental protection and social responsibility (Bureau Veritas, 2023). Created in 1928, now the Group has around 82,000 employees located in more than 1600 offices and laboratories around the globe. Bureau Veritas offer a diversified range of testing, inspection and certification across multiple industry. One of them is pipelines. Bureau Veritas support Oil and Gas industry owners and operators throughout construction of pipelines and storage plants and with regulatory compliance during the asset's life. Exercising rigorous quality control, their pipeline inspection business model optimise maintenance with a special care for health and safety (Bureau Veritas, 2023).

They have a strong presence in Italy with roughly 17 offices and 1 laboratory. The laboratory located in Italy has the main activity of their testing program and inspection in the area of Oil and gas. Their laboratory is engaged in continuous improvement to ensure consistency in terms of accuracy, speed, traceability, and efficiency.

Regarding the hydrogen energy, Bureau Veritas has recently carried out a successful assessment of a section of the gas pipeline network operated by NGT (noordgastransport) and NOGAT (Northern Offshore Gas Transport) in the North Sea. This inspection focused on the sustainability of the pipelines to transport hydrogen (Bureau Veritas Beneloux, 2022).

From this analysis, one can conclude that Bureau Veritas has been doing their pipelines inspection quite well and therefore can pose a threat for ROSEN's entry to Italy.

Bargaining Power of Suppliers

In this model, "suppliers" are entities that provide the key inputs required by a company to deliver its product or service. In the case of ROSEN Europe's hydrogen pipeline conversion consultancy services, these inputs might include:

Human Capital:

In such a niche field as hydrogen pipeline conversion, it's not easy to find highly skilled and experienced professionals. These experts are crucial in helping ROSEN maintain its competitive advantage by offering top-quality consulting services. They understand the technicalities, risk assessment, safety protocols, and system optimization required for effective hydrogen pipeline conversion. If these experts are limited in number or decide to offer their skills to a competitor, it could put significant pressure on ROSEN, leading to increased salaries, training costs, and recruitment efforts.

Technological Equipment and Software:

Cutting-edge technology, including specific software for modelling and simulation, tools for pipeline assessment, and monitoring devices, is critical for ROSEN to perform its services effectively. If these tools are proprietary or supplied by a limited number of companies, these suppliers can exert significant power over prices, licensing agreements, and support services. Any shift in their policies or pricing can affect ROSEN's costs, timelines, and overall quality of service.

Information and Data:

Robust and reliable data is key to making accurate analyses and projections in the field of hydrogen pipeline conversion. This data might include detailed information about existing pipeline infrastructures, research data about hydrogen behaviour under different conditions, and industry trends. Limited availability or exclusivity of such data can give suppliers power to influence pricing or availability, which can directly impact ROSEN's service quality and delivery timelines.

Regulatory Compliance and Certification Services:

The hydrogen economy is heavily regulated due to its environmental and safety implications. Complying with these regulations is vital, and so is keeping abreast of any changes to them. Firms offering services related to regulatory compliance and certifications therefore hold a significant amount of power. Any change in their pricing, service offerings, or interpretations of regulations can affect ROSEN's ability to provide compliant and certified services to its clients. In this regard, ROSEN has an advantage as they have collected and stored data from pipelines as part of their inspection services and so they are uniquely positioned with a wealth of knowledge on the integrity of pipelines across Europe.

The Threat of New Entrants

This force considers how easy or difficult it is for competitors to join the marketplace. The easier it is for a firm to enter a market, the more an established company's position could be significantly weakened. For ROSEN, there is no huge concern of new entrants at this time for the following reasons.

Capital Requirement:

The industry requires substantial capital outlays. These include not only the costs of acquiring and maintaining the necessary machinery and equipment but also the associated costs of maintaining safety standards, continual technological upgrades, and the research and development required to stay competitive. The return on this investment can take a significant amount of time due to the nature of infrastructure projects. This level of initial capital expenditure can deter potential competitors who cannot afford or justify the investment.

Regulatory Requirements:

The nature of the hydrogen industry means it is subject to extensive regulation and oversight, including environmental regulations, safety standards, and licensing requirements. Companies must

navigate through complex legislative and regulatory landscapes at the local, national, and even international level. Regulatory compliance is not only costly but also requires a level of expertise and understanding of these legal frameworks that can be a significant barrier to new entrants.

Technical Knowledge:

The conversion of traditional pipelines to those suitable for hydrogen transport requires highly specialized technical knowledge and experience. This includes knowledge about the material science of the pipelines (as hydrogen can make certain materials brittle), the behaviour and properties of hydrogen as compared to traditional fuels, and an understanding of the infrastructure and safety implications of such conversions. Acquiring this knowledge and training personnel in these specialized skills takes a substantial amount of time and resources.

Economies of Scale:

Companies that already have a foothold in this industry, like ROSEN, benefit from economies of scale. This means they can spread their fixed costs over a larger output, lowering the per-unit cost and allowing for competitive pricing. New entrants will face a challenging task of matching these prices or finding other ways to differentiate their services while operating on a smaller scale.

Brand and Customer Loyalty:

Customer trust and loyalty play a crucial role in industries where the stakes are high, and the margin for error is low, like the hydrogen pipeline conversion industry. Over time, established companies have built a reputation for quality, reliability, and safety. New entrants will have to not only prove their competence but also establish their credibility and trustworthiness in the market.

Access to Distribution Channels:

This involves building relationships with key players in the energy sector, securing contracts for pipeline conversion consultancy projects, and, crucially, ensuring they can deliver on these contracts both in terms of quality and timing. This requires not only technical competence but also the managerial and operational capacity to handle large-scale, complex projects, which is another potential barrier to entry.

These factors all combine to make the Threat of New Entrants a considerable barrier in this industry. It's a significant investment, both financially and operationally, to enter this market, which would likely limit the number of new players willing and able to make that commitment. Therefore, the threat of new entrants is low.

Threat of Substitutes

Other Forms of Renewable Energy:

While hydrogen holds potential as a future energy carrier, other forms of renewable energy, such as solar and wind power, have already established themselves with proven technologies and infrastructure. For instance, an electricity grid powered by wind and solar energy could be expanded rather than converting pipelines for hydrogen. Nevertheless, hydrogen has an advantage in sectors where direct electrification is challenging, such as heavy industries, aviation, and long-haul maritime shipping (IEA, 2019).

Battery Technology:

Batteries, especially Lithium-ion, have been steadily improving in energy density (capacity), lifespan, and cost-effectiveness, which makes them a formidable competitor for hydrogen in some applications. Batteries can be used for energy storage, smoothing out the intermittency of renewable energy sources, and for electric vehicles. However, batteries currently face challenges in large-scale

energy storage, heavy-duty vehicles, and some industrial uses, areas where hydrogen might have the upper hand.

Alternative Methods for Decarbonizing Existing Infrastructure:

There are many emerging technologies looking at decarbonizing existing infrastructure. For example, carbon capture, utilisation, and storage (CCUS) technologies aim to capture CO₂ emissions from the source (like factories or power plants) and either utilize them for other purposes or store them safely underground. However, these technologies are still relatively expensive and complex to implement. Additionally, they don't eliminate the emissions; they only capture them after they've been produced.

While all these alternatives can be considered as potential substitutes, the specific role and benefits of hydrogen in the energy transition may mean that demand for specialized hydrogen pipeline conversion consultancy services will continue to grow. However, the speed and extent of this growth may be influenced by the pace of advancement and adoption of these potential substitute technologies and solutions.

Bargaining Power of Buyers

this refers to the ability of customers to put the firm under pressure, which also affects the customer's sensitivity to price changes. In the context of ROSEN's hydrogen pipeline conversion consultancy services, the customers are typically large energy companies, infrastructure providers, or possibly government agencies, all of whom are looking to transition their existing infrastructure to accommodate hydrogen energy. Such customers tend to have significant bargaining power for a few reasons:

Volume of Business:

When large energy companies, infrastructure providers, or government agencies become customers, they typically require substantial services. This means the loss of any of these could significantly impact ROSEN's business. Consequently, these clients may have the power to demand lower prices or more favourable terms. Conversely, if ROSEN can diversify their client base, reducing dependence on a small number of large clients, they can mitigate this power.

Availability of Alternatives:

As the demand for hydrogen conversion grows, other consultancies or engineering firms may also start offering similar services. The more alternatives available to clients, the more bargaining power they have. Clients may leverage competitive offers to negotiate better prices or terms. However, ROSEN can differentiate itself through high-quality services, unique expertise, or strong relationships, thereby reducing the attractiveness of alternatives.

Price Sensitivity:

Infrastructure projects are often subject to budget constraints. If clients perceive the consultancy services as too expensive, they might try to negotiate the price down or opt for a less costly provider. ROSEN can counter this by clearly demonstrating the value they add to their clients, such as through enhanced safety, compliance with regulations, or long-term cost savings due to efficient and sustainable operations.

In-house Expertise:

Large energy companies often have their own in-house expertise. This could potentially reduce their need for external consultancy services. However, the specificity and rapidly evolving nature of the hydrogen energy sector may still necessitate specialist knowledge. ROSEN can emphasize the

uniqueness of their expertise, up-to-date industry knowledge, and the benefits of an external perspective to maintain their value to clients.

Long-term Contracts:

In the energy sector, it's common to have long-term contracts for projects. This can limit the customers' ability to switch to another provider in the short term, thereby reducing their bargaining power. At the same time, long-term contracts can potentially lock ROSEN into fixed prices, reducing their flexibility in responding to changes in costs.

Industry Trends and Regulatory Changes:

As countries move toward cleaner energy solutions, the demand for hydrogen infrastructure and, by extension, consultancy services for hydrogen pipeline conversion, is expected to grow. This could potentially reduce the bargaining power of customers as service providers like ROSEN find themselves in high demand. However, changes in regulations or policies could also increase clients' bargaining power, particularly if they incentivize or mandate certain practices that increase competition among service providers.

4.5 Conclusion

This Chapter has provided an analysis of the hydrogen market, focusing on the political, economic, social, technological, legal, and environmental factors in Spain and Italy. These factors, along with the current marketing strategies and competitive landscape, play a crucial role in shaping the opportunities and challenges within the hydrogen sector. For a company like ROSEN, understanding these dynamics is essential for strategic positioning in the market. The insights provided in this chapter, from the level of competitive rivalry and market growth to the bargaining power of suppliers and buyers, form a comprehensive foundation for informed decision-making.

The report has also highlighted the potential threats and opportunities in the market, such as the threat of new entrants and substitutes, and the bargaining power of buyers. These insights can be valuable for ROSEN Europe as it navigates the evolving landscape of the hydrogen market.

As the global energy sector continues its transition towards a more sustainable, low-carbon future, hydrogen is poised to play an increasingly significant role. This presents an exciting opportunity for ROSEN to leverage its expertise in pipeline repurposing for hydrogen use and contribute to this transition.

4.6 Recommendations

Understand the Market:

Deeply understand the political, economic, social, technological, legal, and environmental factors in Spain and Italy. This will help ROSEN to tailor their services to meet the unique needs and expectations of these markets.

Differentiate the Offering:

With a number of competitors in the market, it's crucial for ROSEN to differentiate their services. This could be through superior technology, customer service, or unique partnerships. Highlighting these differentiators in marketing materials can help ROSEN stand out.

Generate Leads

B2B marketing is all about ROI focused and efficiency in encoding a message (Decker, 2023).

Italy

Business Conference

Italy's reputation as a top destination for business gatherings, coupled with its rich cultural heritage and stunning venues, makes it an ideal location for ROSEN to host a conference and showcase its expertise in hydrogen pipeline integrity management (fditaly, 2201). An excellent venue that ROSEN could consider is Punta della Dogana in Venice, Italy. This venue boasts a captivating setting and can accommodate up to 150 people in a business conference. Its unique location, situated at the intersection of the Grand Canal and the Giudecca Canal, provides a breath-taking backdrop for a memorable event (fditaly, 2201). Hosting a business conference in Italy would help ROSEN make themselves known to the audience by gathering their industrial experts that can act as the salesperson for their service.

An important thing about holding a conference, going local is highly recommended, meaning hold the conference in Italian language and set up the style in Italian way. For this, ROSEN arranging someone on the upper management who speaks Italian would be much preferred, although when not possible, its recommended that ROSEN hire a local translator to held the conference in Italian. When it comes to hiring a local Italian translator for their business conference in Italy, ROSEN's best option would be to consider the services offered by Sabrinabaccanti. Sabrinabaccanti is a professional translation service provider with expertise in various industries, including business and conferences. Their website provides valuable information about their services and pricing system.

Sabrinabaccanti offers competitive pricing based on different factors, such as the language pair, the type of document or event, and the deadline. They have a transparent pricing system, ensuring that clients receive accurate quotes tailored to their specific requirements. With Sabrinabaccanti's service, ROSEN can benefit from the following:

1. Professional Italian Translation: Sabrinabaccanti offers accurate and high-quality translation services by experienced translators who have a deep understanding of both the source and target languages (SABRINA SBACCANTI, 2020).
2. Conference Interpretation: If ROSEN requires interpretation services during their business conference, Sabrinabaccanti can provide skilled interpreters who can facilitate effective communication between speakers and attendees (SABRINA SBACCANTI, 2020).
3. Tailored Solutions: Sabrinabaccanti understands the importance of catering to the specific needs of their clients. They can customize their services to meet ROSEN's requirements, ensuring clear and effective communication during the conference (SABRINA SBACCANTI, 2020).

Case Study

A less tangible and costly way is to make new case studies that are specified to hydrogen pipelines consultancy service. Case studies are effective in capturing the attention of a particular group of potential customers who have a strong interest in the advantages of their products or services. These case studies showcase the benefits or practical applications from the perspective of other users or customers. Case studies are particularly successful in attracting an audience that is more likely to convert into customers since downloading the case study demonstrates genuine interest in ROSEN's offerings (Shout, 2020). ROSEN already has a quite good number of case studies on their website but perhaps by implementing more case study specifically related to hydrogen pipeline integrity

management would be more relevant to the service that ROSEN is bringing to the Italian market (ROSEN, 2023). Furthermore, translating the website to Italian, by hiring a local translator and not just by translation tools online would help much more to convey the case study to the Italian audience.

Newsletters

An e-newsletter refers to an email that is sent to subscribers at regular intervals to provide them with the most recent news and updates regarding your product or brand. The frequency of these newsletters can be adjusted based on the type of content you have to share and the expectations of your subscribers, allowing you to send them either weekly or monthly (freshworks, 2023). This potential magnet lead could take the potential customers with interest in ROSEN's business to the next step which is the convert step.

Newsletters are more effective for educating and entertaining subscribers rather than solely focusing on making sales. The aim of a newsletter from ROSEN is to provide subscribers with updates and information in a manner that feels like receiving helpful and interesting updates from a trusted source, rather than a forceful sales pitch from a pushy salesperson (Campaign Monitor, 2023).

ROSEN's newsletter can include various elements such as: weekly content summaries, comprehensive guides or ebooks, Interviews with industry experts, Case studies and testimonials, Updates on upcoming sales, promotions, and deals.

However, it is crucial for ROSEN to approach each newsletter with the explicit intention of providing immediate value to the audience. Sending emails to subscribers merely for the sake of it can quickly lead to them feeling unwelcome (Campaign Monitor, 2023).

Leverage Digital Marketing:

Use digital marketing tools such as SEO, content marketing, and social media to reach a wider audience. These tools can help ROSEN to increase their visibility, engage with potential customers, and establish themselves as thought leaders in the hydrogen services industry.

By utilising digital advertising strategies, including paid search advertising, display advertising, and paid social media advertising, ROSEN can enhance its marketing efforts and reach its target audience effectively. ROSEN can choose to outsource its digital B2B marketing efforts to a specialized agency like WEBFX, allowing them to focus on their core business operations while leveraging the expertise of a digital marketing partner. WEBFX is a London based, digital marketing agency that offers a range of services, including B2B digital advertising, search engine optimization (SEO), content marketing, and more. They have a team of experienced professionals who can develop and execute strategic marketing campaigns tailored to ROSEN's specific goals and target audience. By partnering with WEBFX, ROSEN can benefit from their industry knowledge, resources, and proven strategies to maximize their online presence, reach their target market effectively, and achieve their marketing objectives (webfx, 2023).

Build Strong Relationships with Suppliers:

Given the importance of human capital, technological equipment, and regulatory compliance in this industry, building strong relationships with suppliers can give ROSEN a competitive edge. This could also help in negotiating better terms and ensuring a reliable supply of necessary resources.

Focus on Customer Loyalty:

With the threat of new entrants and substitutes, customer loyalty becomes crucial. ROSEN should focus on building strong relationships with their customers, perhaps through a loyalty program or by providing exceptional customer service.

Stay Ahead of Industry Trends and Regulatory Changes:

The hydrogen services industry is likely to be influenced by various trends and regulatory changes. By staying ahead of these changes, ROSEN can adapt their strategy as needed and position themselves as a proactive and forward-thinking company.

Use Data-Driven Marketing:

Use data analytics to understand customer behavior and market trends. This can inform ROSEN's marketing strategy and help them to target their efforts more effectively.

Partnerships and Collaborations:

Consider forming strategic partnerships or collaborations with other companies in the energy sector. This could help ROSEN to expand their reach and enhance their service offering.

5 Offshore Services

5.1 Introduction

This chapter focuses on the Italian and Spanish offshore markets. The objective of this chapter is to analyse both countries offshore gas market through the utilisation of theoretical frameworks. These theoretical frameworks give an in depth view of not only the offshore gas market but of a countries culture, economy, environment, and other factors. This is first done through the PESTLE model. The PESTLE model encompasses six aspects. These are: political, economical, social, technological, legal, and environmental. Secondly, Hofstede's cultural dimensions are utilised to understand both Italian and Spanish culture. Internal information has also been gathered to allow for an understanding of the companies current position in both markets in terms of market position, marketing strategy, and revenue model

5.2 Current Market

Figure 2

PESTLE model

P	E	S	T	L	E
POLITICAL	ECONOMICAL	SOCIAL	TECHNOLOGICAL	LEGAL	ENVIRONMENTAL
Example: <ul style="list-style-type: none">• Current tax policy• Brexit• Trade policies• Political stability• Government policy	Example: <ul style="list-style-type: none">• Inflation rate• Exchange rates• Economic growth• Interest rates• Disposable income• Unemployment rate	Example: <ul style="list-style-type: none">• Lifestyle attitudes• Cultural barriers• Population growth• Population age• Health consciousness• Target demographics	Example: <ul style="list-style-type: none">• Level of innovation• Automation• Technological awareness• Cybersecurity• Technological change• Internet availability/speed	Example: <ul style="list-style-type: none">• Employment laws• Discrimination laws• Health and safety• Copyright protection• Consumer safety	Example: <ul style="list-style-type: none">• Weather• Climate change• Environmental policies• NGO pressure• Recycling• Pollution• Sustainability

Note. ("PESTLE Analysis", n.d.)

Figure 2 is the PESTLE model. This model allows for an in depth analysis of the current offshore market in Italy and Spain. This is done through the models 6 aspects which cover a wide range of topics within both countries.

Italy

Political

The political environment for offshore gas pipelines in Italy is favorable. The Italian government under prime minister Giorgia Meloni plans to double national gas production. This includes both onshore and offshore production ("New Italian government aims to", 2022). This political decision is further backed by the European Union and thus Italy's need to decrease dependency on Russian gas due to the geopolitical climate. However, the current political climate for offshore gas differs greatly

from that of previous years. Therefore, it is important to remember that although the current government looks favorably towards the offshore gas market, a change in political power can lead to an unfavorable political environment.

Economical

The economic environment is favorable. After a small contraction in 2022 the economic activity in Italy is expected to gradually increase this year. Household consumption continues to be hindered by the loss of purchasing power and expiration of tax rebates on transport fuels and other measures which were put in place during the COVID 19 pandemic to support household incomes. GDP is set to increase by 0.8% in 2023 thanks to accelerated private investment and public investment projects included in the governments recovery and resilience plan ("Economic forecast for Italy", 2023).

Social

The social environment is unfavorable. Italy has a strong environmental movement. This can lead to opposition to offshore gas production from environmental groups and local communities. Concerns exist within Italian tourism and fishing communities over the impact that offshore gas production can have in their communities (Lai, 2022).

Technological

Figure 3

Italy's natural gas infrastructure



Note. (“Italy Natural Gas Security Policy”, 2022)

Figure 3 shows the Italian natural gas infrastructure.

The technological environment is favorable. Natural gas is a critical energy source in Italy. Therefore, the country has a well established natural gas infrastructure. Natural gas imports arrive through six interconnection points and three liquefied natural gas terminals. 90% of the imports come by pipeline (“Italy Natural Gas Security Policy”, 2022).

The main Transmission System Operator has planned to upgrade its network through a 400 million euro project to install electro-compressors with a goal of increasing efficiency and reducing emissions. Furthermore, in the last decade the government has been investing in infrastructure to facilitate the reverse flow of gas from Italy to Northern Europe. Thanks to these investments all of Italy’s northern gas interconnections now have reverse flow capacity for exports (“Italy Natural Gas Security Policy”, 2022).

Legal

The legal environment is favorable. There are regulations in place for offshore drilling and production in Italy, including requirements for environmental impact assessments and permits. Although a favorable political climate can lead to a relaxation of certain regulations this is not yet certain (Alvino & Branca, n.d.).

Environmental

The environmental environment is unfavorable. Regulations are in place to prevent environmental damage. Previous governments reduced environmental damage through the reduction of national production and the importation of gas from other countries. However, with a planned increase in the production of offshore gas environmental damage is inevitable. The extent of the damage depends

on a variety of factors. Such as, government regulation, government oversight, incentives for companies to prevent damage, and heavy fines for companies that do damage the environment beyond a government stipulated acceptable level (Lai, 2022).

Spain

Political

The political environment is unfavorable. On May 13th 2021 the Spanish government approved a bill with the goal of setting a date in banning oil and gas exploration. Under the bill the Spanish government will no longer issue new concessions for the exploration or production of fossil fuels and current concessions cannot be extended beyond the 31st of December 2042 (Perkins, 2021).

Economical

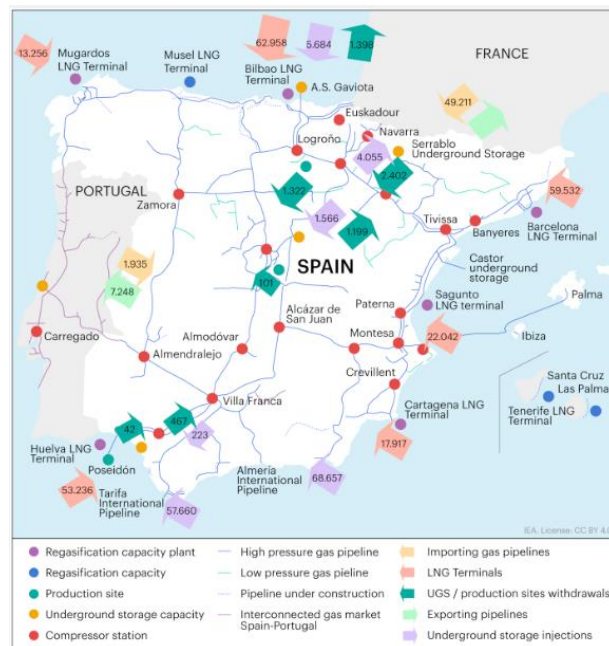
The economical environment is favorable. In 2022 the economy grew 5.5% thanks to an increase in private consumption and the rebounding tourism industry. During the first quarter of this year GDP grew by 0.5%. The labor market and the implementation of a Resilience and Recovery plan will allow for sustained growth which should accelerate in 2024 ("Economic forecast for Spain", 2023).

Social

The social environment is unfavorable. In 2021 tourism accounted for 8% of GDP which amounts to 97,126 million euros. The tourism industry generates 2.27 million jobs or 11.4% of employment ("Spanish Tourism Satellite", 2022). Due to this, a large proportion of the Spanish population is not in favor of offshore as they fear work done in offshore can have a negative impact on the lucrative tourism industry. In 2014 an offshore oil rig was placed in the Spanish Canary Islands with the goal of reducing dependence on foreign oil exports. However, the local population was polled and 84% of residents were against the use of the rig (Frayer, 2014).

Figure 4

Spain's natural gas infrastructure



Note. ("Spain Natural Gas Security Policy", 2022)

Figure 4 shows the Spanish natural gas infrastructure.

The technological environment is favorable. The Spanish government maintains Europe's largest fleet of LNG (liquefied natural gas) terminals. Six out of the seven are in operation. The system has 25 fuel tank storages with 8 berths and the capacity to receive LNG vessels of up to 270,000 cubic metres. Furthermore, the Gaviota underground storage is offshore ("Spain Natural Gas Security Policy", 2022).

Legal

The legal environment is favorable. There are regulations in place for offshore drilling and production in Spain, including requirements for environmental impact assessments and permits. Although an unfavorable political climate can lead to an increase in regulations this is not yet certain (Ruiz & Molina, 2020).

Environmental

The environmental environment is unfavorable. Regulations are in place to prevent environmental damage. Previous governments reduced environmental damage through the reduction of national production and the importation of gas from other countries. As well as the political decision to ban oil and gas exploration from the 31st of December 2042 (Perkins, 2021).

5.3 Important cultural aspects to consider

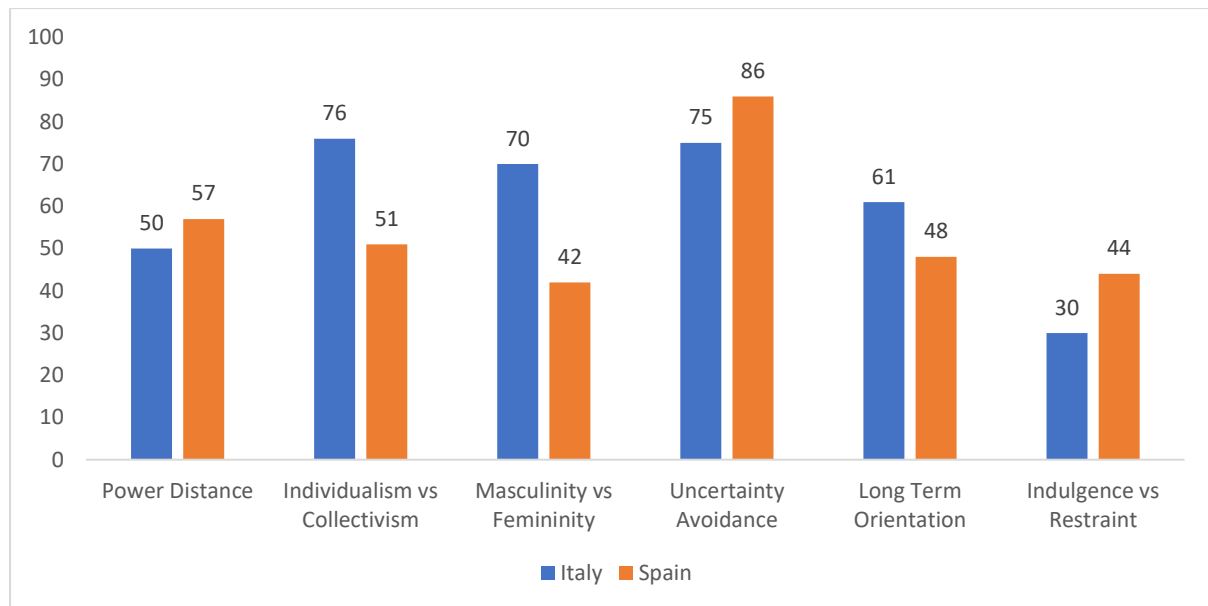
Hofstede's cultural dimensions will be utilized to understand important cultural aspects from both countries. The definitions of the cultural dimensions are ("Hofstede Insights", 2023):

- Power distance:

- This dimension describes the degree of acceptance or tolerance of inequality and hierarchical distribution of power in a society. High power distance societies value hierarchy, status, and authority, while low power distance societies tend to be more egalitarian and value equality.
- Individualism vs Collectivism:
 - This dimension describes the degree to which individuals prioritize their own interests over the interests of the group. Individualistic societies value independence, personal achievement, and individual rights, while collectivist societies value group harmony, cooperation, and interdependence.
- Masculinity vs Femininity:
 - This dimension describes the degree of importance placed on traditional masculine traits, such as assertiveness and competitiveness, versus traditional feminine traits, such as nurturance and relationship-building. Masculine societies value achievement, assertiveness, and material success, while feminine societies value quality of life, social support, and work-life balance.
- Uncertainty Avoidance:
 - This dimension describes the degree of discomfort or anxiety felt in uncertain or ambiguous situations. High uncertainty avoidance societies value rules, regulations, and strict social norms to minimize uncertainty, while low uncertainty avoidance societies tend to be more tolerant of ambiguity and more willing to take risks.
- Long Term Orientation:
 - This dimension describes the degree of focus on immediate gratification versus long-term planning and perseverance. Long-term oriented societies value thrift, persistence, and a future-oriented perspective, while short-term oriented societies value quick results, spontaneity, and immediate gratification.
- Indulgence vs Restraint:
 - This dimension describes the degree of indulgence or restraint toward basic human desires, such as eating, drinking, and sex. Indulgent societies tend to have more relaxed attitudes toward these desires, while restrained societies tend to have stricter social norms around them.

Figure 5

Hofstede's Italy and Spain



Note. ("Hofstede Insights", 2023)

Figure 5 is a cultural analysis of Italy and Spain through Hofstede's cultural dimensions. This analysis allows for an in depth understanding of both countries.

Italy

Power Distance: 50

The power distance within Italy is different between North and South. Northern Italy prefers equality and a decentralized power center. Furthermore, teamwork and an open management style is preferred versus formal supervision. Southern Italy is the opposite. Their a preference for a centralized power center with formal supervision is desired ("Hofstede Insights", 2023).

Individualism versus Collectivism: 76

Italy is an individualistic culture. This is more present in wealthier cities. Italians believe that the route to happiness is through personal fulfillment. Therefore, personal ideas and objectives are very important ("Hofstede Insights", 2023).

Masculinity versus Femininity: 70

Italy is a masculine country. Thus, its citizens are success oriented. From an early age children are taught the importance of success and that being a winner is good. When Italians reach certain levels of success they purchase status symbols. These can be cars, houses, and or trips to exotic countries ("Hofstede Insights", 2023).

Uncertainty Avoidance: 75

Italians are not comfortable in ambiguous situations. This leads to large amounts of detailed planning in the work environment to ensure everything is accounted for. Formality is very important in Italian society ("Hofstede Insights", 2023).

Long Term Orientation: 61

Italians have a pragmatic culture. Therefore, Italians believe that the truth is also dependent on situation, time, and context. They are also easily adaptable and tend to save money ("Hofstede Insights", 2023).

Indulgence versus Restraint: 30

A society with a low score has the tendency to be pessimistic and to have high levels of cynicism. Therefore, Italians have a culture of restraint ("Hofstede Insights", 2023).

*Spain***Power Distance: 57**

Spain is a hierarchical society. Spanish people accept a hierarchy. In the workplace employees expect to be told what to do and the ideal boss is one who holds autocratic qualities. Furthermore, power centralization is popular in the country ("Hofstede Insights", 2023).

Individualism versus Collectivism: 51

Spain is one of the few European countries that has a collectivist society. Thanks to this Spanish people have an easy time relating to other cultures. Furthermore, teamwork is natural and employees are willing and enjoy working in this way ("Hofstede Insights", 2023).

Masculinity versus Femininity: 42

Being excessively competitive is not well looked at in Spain. Education is focused on harmony instead of taking sides or standing out. In the workplace management often holds discussions with subordinates to know opinions and for assistance in making decisions ("Hofstede Insights", 2023).

Uncertainty Avoidance: 86

Spain is a highly uncertainty avoidant country. Scoring 11 points higher than Italy. Rules are in place for everything. Any form of change causes stress. Spaniards try to avoid confrontation as it causes stress and can quickly become personal. The majority of Spaniards would rather have one job for the rest of their lives versus changing jobs.

Long Term Orientation: 48

Spaniards like to live in the moment. They enjoying living life ("Hofstede Insights", 2023).

Indulgence versus Restraint: 44

Although Spaniards enjoy life, they are a society of restraint. Rules and regulations are in place to keep people in check and people believe that their actions are controlled by social norms ("Hofstede Insights", 2023).

5.4 Current market position

The following information was collected from within ROSEN. This was done through presentations, meetings, and emails.

Italy

ROSEN is not currently present in Italy. However, they were present in the offshore market with Ente Nazionale Idrocarburi (ENI). ENI is a state owned company that operates primarily in petroleum, natural gas, and petrochemicals.

Spain

ROSEN is not present in the offshore market in Spain. However, the company is present onshore with Repsol. ROSEN knows the operator well and has done a lot of work for REPSOL offshore in the United Kingdom. Repsol is a Spanish integrated oil and gas company.

5.5 Current marketing strategy

The following information was collected from within ROSEN. This was done through presentations, meetings, and emails.

Each offshore market consists of tight knit communities. ROSEN is not currently present in either the Italian or Spanish offshore markets. However, lessons learned and marketing strategies which have proven to be successful in other offshore markets such as Aberdeen can be implemented in either country. These are:

- Targeted marketing.
- Promoting consultants and their experiences.
 - Recognized professionals.
 - Prior experience with the operator with a good local professional network.

5.6 Current revenue model

The following information was collected from within ROSEN. This was done through presentations, meetings, and emails.

A mix of transactional when products and services are provided on a project by project basis and subscription when a call of agreement is in place with day rates and minimum order values.

5.7 Conclusion

In conclusion, the Italian and Spanish offshore markets have overlapping similarities and differences. However, the Italian market is more favourable thanks to the change in political party, which has led to a planned increase in the production of national gas which covers both onshore and offshore ("New Italian government aims to", 2022). This is further backed by a favourable economic climate thanks to accelerated private investment and public investment projects included in the government's recovery and resilience plan ("Economic forecast for Italy", 2023). Furthermore, the technological environment is favourable. Natural gas is a critical energy source in Italy which ensures

the country has a well-established natural gas infrastructure with 90% of gas imports arriving via pipelines (“Italy Natural Gas Security Policy”, 2022). Lastly, present regulations for offshore drilling and production with requirements for environmental impact assessments and permits create a favourable legal environment, as this allows ROSEN to avoid grey zones (Alvino & Branca, n.d.).

On the other hand, the Spanish market is unfavourable due to the political climate (Perkins, 2021). The Spanish government plans on phasing out any national production of gas through diversification in the energy sector and the importation of gas (“Spain Natural Gas Security Policy”, 2022). In continuation, although the current legal environment is favourable thanks to present regulations for offshore drilling and production with requirements for environmental impact assessments and permits (Ruiz & Molina, 2020). Negative political pressure can lead to a decrease in permits and or an increased waiting time for the approval of permits. Lastly, an economy that is highly dependent on the tourism industry with 8% of GDP and 11.4% of jobs coming from the tourism industry creates an unfavourable social environment (“Spanish Tourism Satellite”, 2022).

5.8 Recommendations

Italy

The Italian market is favourable thanks to a positive political climate, stable and growing economy, developed energy infrastructure, and a favourable legal environment.

ROSEN has been present in the offshore Italian market in the past. The company should lean into its quality reputation with a proven track record and enter the now growing offshore gas market with a focus on helping new projects launch and be successful. This can be accomplished through partnerships/clients with companies like ENI. A company with which ROSEN has worked with before. This would allow ROSEN to be in the market with a trusted partner. Furthermore, thanks to the previous partnership less investment is necessary in marketing and relationship building as would be necessary when building a relationship from scratch. The goal should be long term contracts that secure the companies position and prevent loss of revenue and personnel if a change in government occurs. A mix of contractors with in house employees would allow ROSEN to invest in the market while being flexible to potential changes. The use of contractors does not have to be permanent but would assist in the beginning stages. Especially as the company does not currently have in house personnel they can move to Italy.

Spain

The Spanish market is unfavourable due to the political climate, potential changes in the legal environment, and an economy that is highly dependent on tourism which creates a negative social environment.

However, an unfavourable market does not remove all potential. Potential exists within the Spanish offshore market through the asset and integrity management of LNG terminals and storage facilities. As well as the management of offshore pipelines used for the importation of gas. ROSEN has a known and positive relationship with REPSOL UK. Doing a lot of offshore work for them. The company can lean into this relationship to get projects with REPSOL Spain. Small projects would be best. This would allow ROSEN to have a small footprint in the country and gradually grow through the successful completion of projects and thus the building of positive relationships within the country. As in Italy, a mix of contractors with in house employees is best. This would allow the company to gradually invest in the market while staying flexible to potential changes. As ROSEN

grows within the market lateral movement into other areas of the energy market such as Hydrogen and or Nima would help the company in diversifying risk and preparing for the 2043 oil and gas law.

6 NIMA Services

6.1 Introduction

The chapter of the NIMA service will focus on research about asset integrity management systems, and the various aspects that come with it. The objective of the chapter is to analyse both the countries Italy and Spain and look at the attractiveness of both countries in terms of implementing the asset integrity management system NIMA. The research has been done through the development of a theoretical framework.

The first chapter will talk about the six aspects of the PESTLE analysis, which are political, economical, social, technological, legal and environmental. Through making the PESTLE analysis, an understanding will be created of the current market of asset integrity management systems within Italy and Spain. Furthermore, interesting partnerships and clients will be researched, in order to gain an understanding of what the current stakeholders are within the two countries. This will also help to understand the local markets, as well as the cultures of both countries. Thirdly, there will be looked at the competition of ROSEN in regards of asset integrity management systems. Hereby the framework of porter's five forces will be used, but in this case the four forces will be used. This is because the factor bargaining power of suppliers is not applicable towards an asset integrity management system such as NIMA.

Fourthly, there will be looked at what the opportunities are in both the country Italy, as well as in the country Spain. For example, what the opportunities are culturally wise, but opportunities within ROSEN itself as well. Next to this, threats are identified. Moreover, local regulations in Italy and Spain will be considered, and showcased to ROSEN in order to get a better view of the political environment within the two countries. And as last, research will be conducted about ROSEN's current marketing practices, and what could be enhanced within these practices. As well as looking at future marketing practices that could be applicable to the country Italy and Spain.

6.2 Current Market

For the analysis of the current market in terms of the NIMA platform, a PESTLE analysis will be used. Conducting a PESTLE analysis can be useful when considering to entering a market with an asset integrity management system for oil and gas operators in Italy. Such an analysis of the market can help assess the current market conditions, as well as the external factors that may impact the entry strategy. In Italy and Spain it is important to analyse the political landscape, including government regulations as well as industry specific legislations. Furthermore, evaluating economic indicators help in understanding the market's purchasing power and demand. Social factors, such as culture and workforce must be considered to align the software model towards the expectations of the society. As well as the technological readiness of the country, and the environmental considerations. As it is a difficult market to enter.

Italy

Political

In terms of governmental policies, the Italian government has implemented several policies to support the development of domestic oil and gas resources. Which therefore could create opportunities for asset integrity management software. For example, the government of Italy has introduced a regulatory framework for oil and gas exploration and production, which aims to simplify

permitting processes as well as reducing administrative burdens for operators. This regulatory framework could encourage the adoption of technologies as asset integrity management software.

Italy is subject to EU policies related to energy and the environment of course. As the EU has set ambitious targets for reducing the greenhouse gases, and its emissions. This could affect the asset integrity management operations within Italy. For example, the EU's directive on the safety of offshore oil and gas operations requires today's operators to use advanced monitoring technologies. Technologies of this could be operated underwater vehicles, all in order to enhance the safety and therefore prevent environmental damage through leaks.

Economical

The country Italy has recently been investing in the development of infrastructure to support the oil and gas industry. In recent years, there have been several notable infrastructure projects in the oil and gas sector in Italy which could be beneficial for the platform NIMA. Firstly the Trans-Adriatic pipeline. The country Italy is the main beneficiary of the Trans-Adriatic pipeline (TAP). This pipeline transports natural gas from Azerbaijan to Italy through Greece and Albania. Hereby making the pipeline was a huge investment from Italy in its energy infrastructure. The biggest natural gas transportation company which is called Snam Rete Gas has invested heavily in infrastructure development as well. Including the construction of new pipelines, all in order to improve the efficiency and reliability of its operations. These investments in infrastructure can create opportunities for NIMA's asset integrity management system platform NIMA. As ROSEN can work closely with infrastructure developers and operators, hereby identifying opportunities to provide value-added services that improve the safety, efficiency and sustainability of Italy's oil and gas infrastructure.

Social

Like was previously mentioned, Italy is a world leader in innovation and known for its creativity. The field of the country in terms of robotics and automation is globally renowned for its excellence (Puggioni, 2022). One negative point in terms of social aspects is that the country is very language dependent. Only 13% of the population within Italy can speak English (Whyte, 2022). Furthermore, the maintenance of personal relationships is very important when considering to do business in Italy, it is often not effective to rely on departments that are outside of the country. As these departments do not know how the culture or market works within Italy. Therefore it is easy to have an established network of relationships within the country, hereby making a solid understanding of the local practices and regulations (Trade.gov, 2022).

Technological

At the moment, Italy is advancing at a rapid pace in the cloud computing software industry. This could be beneficial for ROSEN Europe, as all of the big raw data which comes from the operators will need to be stored in a cloud. And cloud computing makes it possible to implement other solutions as well. It is believed that it will be at the front of digital revolution, as solutions such as information management could be used by it. Therefore things such as big data, cognitive analytics and prediction models can be easily made. But more recent developments could be used in terms of information management as well, such artificial intelligence as well as machine learning methods, which ROSEN Europe already uses as well.

Eurostat, shows that cloud technologies within Italy are increasingly advancing. As 22% of the current cloud technologies have been introduced by Italian companies, with a market growth per year of 18% (Fratta, 2019)

Edge computing, edge computing involves processing data at the edge of a certain network, meaning close to where it is collected. This form of computing reduces the postponement that is related to transmitting data to a central server. Hereby enabling real-time monitoring, as well as a faster analysis of pipeline operations.

Another technological trend which is happening at the moment is the rise of artificial intelligence and machine learning. By this trend, ROSEN could make use of AI and ML algorithms and hereby predict potential equipment failures even before they occur. This is done by analysing sensor data from the pipeline, and therefore the platform detects anomalies and patterns that indicate that the equipment of an operator is failing. This will reduce downtime and maintenance costs for operators, hereby improving the reliability of the pipelines. But it can improve safety as well. With the use of AI and ML algorithms, the platform NIMA can detect potential safety hazards such as leaks, or corrosion before they become critical as well. Allowing operators to take action before a huge event occurs, hereby reducing the risk of accidents, pollution and injuries.

Legal

Firstly, there is looked at the primary law, which is governing the oil and gas industry in Italy. This law is called the Legislative degree No. 164/2000. This law established the rules for the construction, operation and maintenance of pipelines for the transportation. Therefore, it requires the pipeline operators to obtain specific authorizations and permits from several different authorities. Including the Ministry of economic development, the Ministry of Environment as well as relevant regional authorities. The degree also requires technical requirements for pipeline construction and operations, such as the materials and equipment that must be used, as well as the monitoring and inspection procedures that are to be followed. Therefore the law is important, as it measures to prevent and manage accidental spills within oil and gas pipelines (Italiana, 2000).

Another important regulation that applies to pipeline inspection activities in Italy is legislative degree No. 152/2006. This degree sets out the different rules that are needed to manage the waste and other environmental issues. It looks at, and establishes strict requirements for the handling as well as the disposal of materials and other substances that are made during pipeline inspection activities. This could be waste from pigging operations, or waste that comes from the cleaning of pipelines (Fragasso, 2006).

In addition, different inspection companies within Italy must comply with several technical standards, which are established by the Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA). This ENEA provides guidelines for pipeline inspection activities such as the NIMA platform. Examples of what the guidelines are, are pipeline cleaning, pipeline inspection techniques as well as handling the raw data that comes out of the pipelines, and reporting this data towards several organisations.

There are also international standards to which inspection companies such as ROSEN Europe have to comply with. These are for example ISO 9001:2015 for quality management systems (SQ, 2015), as well as ISO14001:2015 which looks at environmental management systems (ISO, 2015). These standards are set for the inspection companies to ensure that its inspection activities are conducted at a high level of quality, and in a way that it is responsible for the environment.

Environmental

The environmental impact which is caused by NIMA being active in Italy would be bigger. As the NIMA platform makes use of data centres in order to store its data, as well as transforming the raw

data. And as is known, data centres are not that environmentally friendly. But there could be several solutions for this problem.

Italy's government has put environmental and sustainable impact as one of the top priorities in their political agenda. The country has a national energy and climate plan to deal with introducing renewables in Italy. They are ambitious targets, as the country wants to aim at 30% of totally energy consumption being renewable energy, as well as 55% of the total electricity generation to be renewable energy (Balances, 2022).

Environmental impact assessment (EIA), ROSEN Europe could use the toll of EIA to assess what the important changes are for the platform NIMA within Italy. Therefore, the company can look at what the environmental impact will be of introducing the platform NIMA in the country, as well as looking at what the social impact will be.

Spain

Political

Spain adopted its first law concerning Climate Change and Energy Transition Law only in May 2021. It includes cutting the country's emissions by at least 23% by 2023 in comparison with 1990.

Additionally, banks, companies and other firms are required to release an annual report regarding climate risks. New fossil fuel exploration is prohibited and fossil fuel production on Spanish territory is planned to be ended by the end of 2041 (Gato, 2023).

Spain has also just approved a customer service bill which requires businesses with more than 250 staff or a 50m euro to have a mandatory customer service system (Ganguly, 2022).

Economical

The current economic situation in Spain has been largely impacted by the COVID-19 pandemic, resulting in a change from a growth phase to a decline in the economy. The sectors most affected by the restrictions (catering, leisure, hospitality, culture, tourism and passenger transport) pose the main risk to the economy. The active population in 2019 was 23 million people with a 14.1% unemployment rate, increasing to 16.13% in the last quarter of 2020 due to COVID-19. The services sector contributes the most to Gross Value Added (GVA) at 74.5%, followed by the industrial sector at 16.1%, construction at 6.4% and agriculture at 2.9%. While the COVID-19 crisis has caused a decrease in the service sector, agriculture has grown and contributed to meeting the basic needs of the population ("Spain — English," n.d.).

Social

Spain's population reached 47,332,614 inhabitants on 1st January 2020, indicating a 0.84% increase from the previous year and a 17% increase from 2000. However, the natural increase is negative due to more deaths than births each year, leading to population shrinkage and ageing, compensated only by immigration. The population growth was highest between 2000 and 2009, majorly due to immigration. Still, since 2010, there has been a stabilization with small fluctuations. The foreign migration balance in Spain was negative from 2010 to 2015, but it has been positive again since 2016, resulting in population growth. The percentage of people over 65 years of age is 19.58% of the total population, and it is expected to rise to 32% by the middle of the century. The child population is only 14.53%, and the birth rate is low at 7.6 births per 1,000 inhabitants. There are more women than men, and foreign residents make up 11.1% of the population. Spain has a constrictive population pyramid, indicating an ageing society ("Spain — English," n.d.).

Furthermore, depopulation in rural areas has been a persistent issue, with negative population trends in smaller municipalities, leading to a significant increase in pressure on environmental quality

in cities. Depopulation has become an even more widespread process in the last decade, affecting 76.6% of municipalities, and the floating population due to tourism also causes significant cyclical and seasonal population variations in certain regions ("Spain — English," n.d.).

Technological

According to the Global Innovation Index 2022, Spain ranks 29th among 132 featured economies, which is one rank higher than the last two years. Spain performs best in the categories of Infrastructure, Human Capital and Research, and knowledge and technology outputs (World Intellectual Property Organization, 2023).

ENAGAS, the technical manager of the Spanish Gas system has also collaborated with CIME, the Structural Materials Research Center; the Technical University of Madrid and the University of Cantabria to develop an IT tool for the assessment of gas pipeline anomalies, such as dents, cracks and corrosion. Additionally, there is a module to process geometric data from any commercial 3D scanning tools, corrosion assessment via an adaptive neuro fuzzy model and learning capacity (ENAGAS, 2021).

Legal

In the Spanish hydrocarbons sector, the Corporación De Reservas Estrategicas De Productos Petrolíferos (CORES) is tasked with the responsibility of collecting data during times of crisis. The data collected is used to provide a comprehensive analysis to various entities, such as the government, market stakeholders, and international institutions like the IEA and Eurostat. CORES has developed a digital data platform, InfoCores, which is accessible to all market participants. This platform enables the gathering and processing of market data immediately, especially in the case of a supply crisis ("Spain Oil Security Policy – Analysis - IEA," n.d.-b).

Entities within the hydrocarbons sector are legally obliged to provide information to CORES, as part of their obligation to maintain security stocks. The importance of providing information is legally equivalent to the importance of maintaining security stocks. CORES' core function is to inspect and control the quality and timeliness of data provided. Failure to report or provide inaccurate information is considered a serious offence under Spanish law, and it may result in significant penalties, including withdrawal of the operating license ("Spain Oil Security Policy – Analysis - IEA," n.d.-b).

In Spain, transportation companies are permitted to construct, operate, and maintain regasification, transport, and basic storage facilities for natural gas. The country's gas regulations make a distinction between primary and secondary transportation facilities. Primary transportation includes gas pipelines with a minimum pressure of 60 bars, LNG regasification plants, and basic storage facilities that supply the gas system. Secondary transportation facilities, on the other hand, consist of gas pipelines with pressures between 60 and 16 bars ("Oil And Gas Regulation in Spain: Overview | Practical Law," 2020).

While there are several transportation companies, Enagás Transporte has been designated by law as the responsible party for developing and constructing any new facilities that qualify as "red troncal." Red troncal includes high-pressure pipelines necessary for the gas system to function, such as international interconnectors, connections with natural gas fields or main storage, interconnectors with regasification plants, and compressor stations ("Oil And Gas Regulation in Spain: Overview | Practical Law," 2020).

The legally designated technical manager of the gas system is Enagás GTS, which is a part of the Enagás SA group. Distribution involves constructing, operating, and maintaining the distribution

network, which consists of gas pipelines with pressure at or below 16 bar, support installations, and pipelines that distribute gas directly to a single customer from the primary and secondary transportation networks regardless of pressure (“Oil And Gas Regulation in Spain: Overview | Practical Law,” 2020).

On top of being is the technical manager of the Spanish gas system, ENAGAS also has advisory and consultancy services. They have outsourced inspection to other companies (“Mediterranean Pipeline Inspection Scheduled,” 2007).

ENAGAS has also collaborated with CIME, the Structural Materials Research Center; Technical University of Madrid and the University of Cantabria to develop an IT tool for the assessment of gas pipeline’s anomalies, such as dents, cracks and corrosion. Additionally, there is a module to process geometric data from any commercial 3D scanning tools, corrosion assessment via an adaptive neuro fuzzy model and learning capacity (ENAGAS, 2021).

Environmental

Spain is among one of the most affected countries in the EU when it comes to climate change (Gato, 2023).

The government of Spain has established policy objectives that align with the country's commitments under the Paris Protocol to the United Nations Framework Convention on Climate Change 2015 (Paris Agreement) and the EU 2030 climate and energy framework. These policy objectives aim to promote sustainable energy practices and reduce the country's carbon footprint (“Oil And Gas Regulation in Spain: Overview | Practical Law,” 2020).

The primary policy objectives guiding regulations in Spain are centred around achieving a greater level of energy self-sufficiency, which will involve reducing the country's dependence on fossil fuels. By doing so, Spain hopes to improve its energy efficiency and cut down on greenhouse gas emissions, ultimately helping the country meet its international commitments to combat climate change (“Oil And Gas Regulation in Spain: Overview | Practical Law,” 2020).

To support these objectives, Spain is also promoting the use of renewable energy sources. By shifting towards renewable energy sources such as wind and solar power, Spain hopes to reduce its reliance on non-renewable sources of energy and decrease its carbon footprint (“Oil And Gas Regulation in Spain: Overview | Practical Law,” 2020).

Overall, the government of Spain is committed to promoting sustainable energy practices and reducing their impact on the environment. By pursuing these policy objectives, Spain is playing an important role in the global effort to combat climate change and build a more sustainable future for generations to come (“Oil And Gas Regulation in Spain: Overview | Practical Law,” 2020).

Spain has a National Energy and Climate Plan (NECP) which targets carbon neutrality in 2050. To do so the country plans to drop oil consumption by 23% over the next 10 years (“Spain Oil Security Policy – Analysis - IEA,” n.d.).

Oil emergencies in Spain are categorized as a national security matter. This is because, in 2015, the National Emergency Strategy Organisation (NESO) was integrated into the National Security System. This means the oversight of the energy security system is at the highest level, politically (“Spain Oil Security Policy – Analysis - IEA,” n.d.).

6.3 Interesting partnerships/clients

In the process of introducing the NIMA platform in the country Italy and Spain, conducting a research and analysis of potential partners and clients can bring its advantages. This analysis involves the assessment of different partners or clients, including oil and gas companies, pipeline operators, research institutions, technology and data analytic companies, governmental agencies and environmental organizations. By understanding these partnerships and clients, the most suitable partners or clients can be chosen, and hereby create an effective collaboration wherein the entry within the Italian market will be more efficient.

Italy

Oil and gas companies

Eni

The company Eni is a Italian energy company which is primarily in petroleum, natural gas as well as petrochemicals. Eni is established in 1953, and is one of Europe's largest oil companies in terms of sales (Curley, 2023). Collaborating with Eni would provide ROSEN Europe with access to their pipelines, as well as extensive datasets in Italy.

Enel

Enel is a Italian multinational manufacturer and distributor of different kind of electricity and gas. The company produces, transports and distributes, and sells/trades electric energy. Partnering with Enel would offer ROSEN the opportunity to work with their pipeline infrastructure.

Pipeline operators

Snam

Snam is one of Europe's largest natural gas infrastructure companies, and is currently operating in a big network of pipelines in Italy. Therefore, partnering with Snam would provide ROSEN Europe with valuable insights into the local pipeline infrastructure of Italy.

Saras Energia

Saras Energia is an Italian energy company, which has a refinery that is located in Sarroch. The company primarily focuses on refining operations, but it also manages a pipeline infrastructure for the transportation of crude oil (Group, 2010). Hereby a collaboration with Saras provides ROSEN with insights in the transportation and logistics aspect of pipeline operations within Italy.

Research institutions/Universities

Politecnico di Milano

Politecnico di Milano is a big technical university in Italy, which is known for its knowledge in researching engineering and other energy sectors. Therefore it would be wise for ROSEN to partner up with this university, as it would allow the company to receive valuable insights for the development of ROSEN's platform and belonging technologies.

Università degli Studi di Pavia

The universit  degli Studi di Pavia is another University in Italy which invests heavily into research programs that are engineering and energy related. Therefore it would again be wise to collaborate with this institution, as it would offer valuable insights for developments.

Technology and data analytic companies

Accenture

Accenture is a global technology and consulting company with a focus on data analytics. The company provides innovative and comprehensive services within several areas, for example system integration and application management withing clouding or intelligent platform services and infrastructure services but data and artificial intelligence systems as well (Accenture, 2023). Therefore ROSEN could collaborate with these companies in order to gain knowledge within analytical models and data within Italy.

Capgemini

Capgemini is a global consulting and technology service company. The company specializes in the digital transformation, but focuses on technology consulting as well as data analytics. Capgemini has a strong presence in Italy, and offers services that go from data management, to data analytics and integration of technology (Capgemini, 2022). Hereby, collaborating with Capgemini, ROSEN could have access to the expertise of Capgemini and receive strategic consulting within Italy.

Governmental agencies/Regulatory bodies

Ministry of economic development (MISE)

The Ministry of economic development is the governmental agency within Italy that is responsible for the making of energy policies as well as the regulation of it in Italy. Therefore it would provide ROSEN with insights in Italy's regulatory requirements as well as the compliance standards within the oil and gas industry.

Autorit  per l'energia elettrica

Also called AEEGSI, the Autorit  per l'energia elettrica is the regulatory authority within Italy for electricity gas and water. A collaboration with AEEGSI would allow ROSEN to take a look into the regulatory framework within Italy.

Environmental and sustainability organisations

Legambiente

Legambiente is one of Italy's biggest environmental associations. The association promotes sustainable development, environmental protection and preservation of natural resources (Lifeterra, N.D.). Therefore it could be useful to partner up with Legambiente, as it would provide ROSEN with insights into the environmental regulations as well as the guidelines within Italy.

Kyoto club

The same as Legambiente, Kyoto club is a big environmental association within Italy. With the knowledge that Kyoto club has in terms of sustainability and protection and preservation, it could be useful for ROSEN to partner up with this association. Therefore gain insights into the countries sustainable developments, as well as gaining a positive brand image, as the company is showing its interest in sustainable development.

Spain

Pipeline operators

ENAGAS

ENAGAS is the most important partner when it comes to pipeline operators in Spain because they are the technical manager of the gas pipeline system, as mentioned in the PESTLE analysis. Collaborating with them would be beneficial for ROSEN due to the many project opportunities and their pre-existing data on Spain's pipeline system. As the technical manager of the gas pipeline system they are likely also well respected in the industry in Spain which also makes them a valuable partner for ROSEN as a company just entering the Spanish market.

CLH Group (Compañía Logística de Hidrocarburos)

The CLH Group owns the oil network in Spain (incl. 11 oil port terminals, 4.006 km of pipelines, and storage capacity) so working with them would grant ROSEN lots of work opportunities ("Spain Oil Security Policy – Analysis - IEA," n.d.). Same as with ENAGAS, working with the CLH group would also give ROSEN a good reputation in Spain.

Universities

Spain has several schools offering programs in the oil and gas industry, partnering up with them for research cases or other studies could be a good way to get a good reputation and more known in Spain's oil and gas industry, as well as giving them direct access to possible future employees in Spain. The two most renowned programs related to the oil and gas industry in Spain are at Geneva Business School in Barcelona and at Bircham International University (Smapse, 2022).

Governmental Agencies

Ministry for Ecological Transition and Demographic Challenge

The Ministry for Ecological Transition and Demographic Challenge is responsible for overseeing and implementing policies related to the environment, sustainability, and population dynamics in a country. Its main focus is to address the challenges posed by climate change, promote the transition towards a greener economy, and manage demographic shifts and their impact on society. This ministry works towards ensuring a sustainable and resilient future by developing strategies for renewable energy, biodiversity conservation, waste management, and promoting balanced and inclusive demographic development ("Ministry of Environment (Spain)," 2023). The Ministry has several areas of interest in the energy sector, including the for ROSEN relevant liquefied petroleum gas, natural gas and oil ("Areas of Interest," n.d.). Because of that ROSEN can acquire valuable information, especially for future sustainable energy legislation from them.

Environmental Institutions

ECODES

Ecodes is a Spanish NGO established in 1992, driven by the belief that every individual should have the opportunity to inhabit a thriving planet. They envision achieving this goal through collaborative efforts among organizations and individuals to build a resilient, inclusive, and sustainable society and economy. Ecodes undertakes various initiatives such as projects focused on mitigating and adapting to climate change, researching clean energy solutions, analyzing legislation, advocating for policy changes, and conducting public educational programs. Their work often involves partnerships with other NGOs, Spanish government officials, and EU organizations (Global Climate Pledge, 2022). ROSEN can benefit from working with them because of their research into natural clean energy and

advocation for policy changes. It could not only help in working most sustainably, predicting and adjusting to new environmental new legislation but also give them an established partner to enter the Spanish market with.

6.4 Competition

Italy

To analyse the ROSEN's competitive environment in terms of its asset integrity management system, the framework of Michael porter's five forces will be used. But instead of using the five forces of porter, in this case, four forces will be used. As the bargaining power of suppliers is not applicable to the platform NIMA. Therefore, there will be looked at industry rivalry, threat of substitutes, bargaining power of buyers and threat of new entrants.

Industry rivalry

Saipem

The company Saipem is an Italian multinational company, which focuses on engineering, construction as well as drilling services in the oil and gas industry. The asset integrity management system focuses on the outcome of a good design as well as construction and operating practices which adopt the integrated management in order to reduce the risk of major accident events (MAE) (Saipem, 2022).

The company Saipem has worked together with MCS, which is an underwater technical and digital solutions company. The asset integrity management system will be called the PALM suite which stands for platform for asset lean management. And this platform is designed in such a way that it will support offshore energy operators with their asset data management, assessments of risk and inspection planning. The platform will look at energy sources such as oil and gas, renewables and power/data networks (Offsnet, 2023).

Next to this, the PALM suite makes use of advances features, such as 3D reconstruction of subsea dimensional control, but will use IoT (internet of things) data gathering as well. IoT gathering refers to the process of collecting and analysing the data from various devices and sensors. These IoT devices are physical objects that have sensors, software and other capabilities on them which enables the objects to exchange data over the internet (Enertiv, N.D.).

DNV

The company DNV is a world leading classification society, as well as a advisor for the maritime industry. The company delivers testing, certification as well as technical advisory services for the oil and gas, energy management and renewables industry. The asset integrity management system of DNV is called the Synergi plant. And is a software solution in order to help organizations to effectively manage its integrity, as well as ensuring reliability to its customers across its industry.

The main concern of Synergi plant is to optimize the OPEX (operational expenditure) of a company through maintenance plans, work processes, condition monitoring as well as an analysis of the performance of a plant. The company does so by looking through the whole asset lifecycle, which

includes development of an asset, the implementation, operation, training and verification by the use of RBI (risk-based inspection) onshore and offshore software (Wong, N.D.).

The system works with a standard package, which is very flexible. But the package can be scaled up as well, with different software modules such as performance forecasting through a RAM analysis called Maros. This software is a powerful software tool, which can predict asset performance in the oil and gas industry (Wong, N.D.).

ABB

ABB is a global technology company, which specializes in power and automation technologies, including solutions for the oil and gas industry. Whilst ABB does not have a separate asset integrity management system with a specific name, its portfolio of solutions as well as its services aim to address the integrity management problems of operators within oil and gas (ABB, 2021).

The company ABB teamed up with a company called Metegrity in 2021. This was done in order to help the operators of oil and gas pipelines increase their productivity, whilst in the mean time increase the risk management. This collaboration allows ABB to streamline its reporting, therefore moving away from reporting in different systems, and integrating everything into one system (ABB, 2021). Therefore it will enable the operators to instantly access the data, if an unexpected event will take place.

SGS Italy

SGS Italy is a multinational company that is located in Geneva, Switzerland. It is one of the world's biggest companies in terms of inspection, verification, testing and certification. The company operates through various industries, hereby providing services towards operators, and ensures quality, safety as well as compliance with regulations (SGS, N.D.).

The asset integrity management system of SGS is called AHEAD and stands for asset health, effectiveness and diagnostics. The goal of AHEAD is to monitor the health of an asset, as well as creating stable and performance considerations. But its inspection capabilities will detect early incipient problems as well. Next to this, the system will apply corresponding measures towards these problems, thereby reducing time.

The system makes use of automated process monitoring by looking at KPI's (key performance indicators). Afterwards, the system creates a diagnosis of what the cause is, and hereby recommendations what the appropriate actions are. One of the strengths and unique values of the system AHEAD, is that it makes use of a fully automated root cause analysis. This provides its operators with real-time management of assets for big companies whilst reducing workloads (SGS, N.D.).

Threat of substitutes

ERP systems

ERP systems can have certain plus points compared to an asset integrity management software. This is because in an ERP system, various business functions can be integrated. Meaning that other departments can be in there as well such as finance, procurement or human resources. This integration of departments allows for a more streamlined data flow as well as an effective collaboration between the employees (Srivatsan, 2022).

Point solutions

Instead of adopting to a comprehensive asset integrity management system, a company could choose to implement point solutions, or individual software tools. Therefore these point solutions can address specific aspects of the integrity of an asset. For example, a company could make use of separate software for risk assessment, inspection management or maintenance planning.

AI

Artificial intelligence has the possibility to disrupt the systems of asset integrity management. This is because artificial intelligence could offer advanced analytics, predictive capabilities that are smarter than an asset integrity management software or constantly having the ability to optimize its algorithms.

Bargaining power of buyers

Normally when an operator is starting a project on the platform NIMA, a model is made which is the actual revenue model of ROSEN. This revenue depends on the clients wishes, as well as the number of licenses the operator wants to use, how much data will be used on the site and how big the project is going to be. And that would eventually determine the price for the operator. Therefore there is a bargaining power of the buyers for the platform NIMA. As the prices depend heavily on what the customer needs are, as well as what the specific requirements are of the customers. Some customers will only use one part of the platform, such as small operators that only use the basics of the platform (Singh, 2023).

These projects are tendered based, and the revenue model is based upon milestones. So depending on the work that is put in a milestone, ROSEN will receive for example 20% of the project payment. Similar, when the work is finished in the second milestone, ROSEN will receive another percentage. This changes per project, and therefore ROSEN does have a say in the costs, as all of the costs are based upon a standard price. But based upon the customer, this can vary.

The company ROSEN has another revenue model, which is SaaS (Software as a service). Meaning that the revenue model is based upon subscriptions, which are dependent on the monthly usage of a customer. The packages include: Essentials, professional and expert. This can either be a six month subscription, but It can be a two year subscription as well where the fees are fixed. In this revenue model, the bargaining power of suppliers is low, as prices are fixed. But currently there are not a lot of SaaS markets in Europe for an asset integrity management system, as everything is mostly done on premise (Singh, 2023).

Threats of new entrants

The threats of new entrants is dependent on several factors. When there are a lot of small operators within Italy, the operators could go for companies that offer cheaper asset integrity management software. This is mainly because the country of Italy is so language dependent (Singh, 2023), therefore the smaller operators favour new entrants that know the culture, as well as having the ability to create an asset integrity management software in the Italian language. Another threat of new entrants is that price pressure can occur. This is because smaller operators favour lower prices.

Spain

Industry rivalry

Overall, the rivalry amongst the existing competitors is medium to low. This is because of the nature of their products, customers are likely to be loyal to a company they worked with before, especially if the company is already used to working with one company's software. If a customer has only used basic services of a company in the industry or it is a new company looking for an asset integrity management provider, they are more likely to switch to a competitor which is where the rivalry is likely the strongest.

Since the European market is very connected and the biggest competitors are from outside of the researched countries, there is an overlap between competitors in the section for Italy and Spain. One being in one section and not the other does not mean they won't be a competitor in the other market. In the following, the three biggest competitors in the Spanish market will be presented.

The first competitor is SGS. SGS is a Swiss multinational company that specializes in inspection, testing, and certification services for businesses worldwide ("SGS in Brief," n.d.). The company has a very broad portfolio of services and serves a broad range of sectors. They offer services such as product testing, quality assurance, and supply chain auditing, helping businesses enhance their products' quality and safety. SGS claims to be the world's leading inspection, testing, verification and certification company ("Asset Integrity Management," n.d.-b). SGS offers asset integrity management "wherever your asset is based" ("Asset Integrity Management," n.d.). Like ROSEN, they not only do asset integrity inspection and non-destructive testing, but also offer data management support and a related software. They also set a focus on national and international standards and guidelines ("Asset Integrity Management," n.d.-b).

Another competitor is TÜV Rheinland. TÜV Rheinland is a leading global provider of technical services based in Germany. The company specializes in testing, inspection, certification, and consulting across various industries. TÜV Rheinland's expertise spans sectors such as automotive, energy, industrial services, and information technology. They help businesses ensure the safety, quality, and sustainability of their products, processes, and systems through rigorous testing and assessment (Rheinland, n.d.). Concerning asset integrity management, they offer integrated testing, inspection, training and consulting services while stressing that they offer the complete package from the design of an asset until the close down. While they also offer software, TÜV Rheinland sets a focus on their highly skilled personnel (Rheinland, n.d.-a).

Finally, the company DNV. DNV is a global provider of assurance and risk management services headquartered in Norway. The company operates in various industries, including maritime, energy, healthcare, and sustainable business practices. DNV offers a wide range of services, including certification, classification, verification, and advisory solutions. They help organizations improve their safety, sustainability, and performance by assessing and managing risks, ensuring compliance with standards, and promoting responsible business practices ("DNV.com - When Trust Matters - DNV," n.d.). DNV offers two integrity management and maintenance softwares, the Synergi Plant and the Synergi Pipeline software, which are web-based software systems ("Pipeline Integrity Management Software | Pipeline Risk Management | Synergi Pipeline," n.d.). Though they also mention their consulting experts, DNV is the company that advertises their software services by far the most on their website, which likely makes them the biggest competitor for NIMA.

Bargaining power of buyers

The bargaining power of buyers is medium. The buyer has power since there are multiple rather big and established companies in the market offering alternatives. However, AIM is a rather essential

service that the customer should not operate completely without, and if one service is already in place the effort to switch is rather high. Additionally, due to the amount of specialized personnel and equipment required the buyer is likely not able to do it in-house easily.

Threats of new entrants

The threat of new entrants is medium to low. One reason for that is that AIM benefits from a company's long experience with the subject and experienced personnel, which makes the market harder to enter. Additionally, the initial capital investment to start integrity inspection and consulting is quite high due to the required technology. Finally, as mentioned before the effort of switching are relatively high for the customer, which contributes to a lower threat of new entrants as well. This only applies to companies providing the whole AIM systems including inspection, analysis, software etc. but it is easier for smaller companies to enter who only focus on half of the process.

6.5 Opportunities and threats

Identifying opportunities and threats is important when introducing an asset integrity management software for oil and gas operators in Italy and Spain. This is because by identifying these factors, the company ROSEN can gain insights into the market dynamics, the framework and the industry specific challenges in these two countries. Identifying opportunities will allow ROSEN to tailor its software or tools to meet the specific needs of the market, hereby gaining a competitive advantage. Whilst identifying potential threats allow ROSEN to decrease risks, hereby adapting the strategy accordingly.

Italy

Opportunities

Marketing of NIMA in Italy

The marketing part of the NIMA platform in Italy is an opportunity for the company ROSEN. This is because ROSEN its marketing practices are not that effective and efficient compared to competitors such as NDV. The competitors are making use of targeted marketing campaigns, with very appealing visuals (Singh, 2023). Conceptualisation for marketing practices of the company ROSEN is difficult to make. Therefore looking more into marketing practices, and being reactive instead of pro active would be in the best interest for the company.

Partnership program model for the NIMA platform

Currently, ROSEN is not making use of a partnership program which links operators with pipeline This could be an opportunity for ROSEN, since it would make communication between operators and ROSEN easier. All of the competitors of ROSEN are currently using a partnership program model, and these competitors are showing that the program model is useful. For example, the veracity integrated partner program. This program creates a secure connection with operators and its integrity system by using API technology (Veracity, N.D.). Hereby consented data can be transferred back and forth. This can boost customer value as well, as customers enjoy secure data transfer. But it will attract more businesses as well, as it is a global network, whereby business opportunities can be identified.

Hire the right resources for NIMA in terms of integrity knowledge

Somebody is needed in ROSEN that needs constant engagement with operators. Engineer and consulting work, and that is difficult. An opportunity for ROSEN could be that the company hires

people that have a technical background in operating the NIMA platform. And therefore can advice, push and sell it to the operators. Hereby, ROSEN can push the NIMA platform as a solution for pipeline operators through knowledge of the platform, rather than pushing it to the operators as a software model.

Adaption of languages

For the country of Italy, it is difficult to adapt the platform towards the language of the country and the operators (Singh, 2023). For now, the platform is still in the language of English. This will be less effective for countries such as Italy, as these countries are heavily dependent on their own language. Therefore, it would be an opportunity to create a more targeted marketing campaign for the country Italy. Hereby considering the regional factors that come with introducing the NIMA platform towards future operators, or existing operators.

Threats

The risk

Risk modelling, as well as risk factors that come with the integrity part of NIMA are identified as the most difficult part. That is because there may be limited historical data, or uncertainties regarding future operating conditions, environmental factors or regulatory changes. With each risk factor having its different characteristics and consequences.

Different pricing models

NIMA makes use of a premise model, which is based upon a revenue model that depends on the country, as well as the project revenue that is made, it also looks at the number of licenses that are needed, and how much data is to be used. But next to that, the platform makes use of a SAS approach as well. Meaning that the platform and its services are based upon a subscription model with monthly usage. Meaning a 6 month subscription, or a 2 year subscription where the fees are fixed. There are not a lot of SAS markets in Europe (Singh, 2023), therefore it could be a threat for the SAS side of the platform, as this side will mostly not be used by operators.

Small operators that operate locally

As ROSEN is a big company in the integrity side for oil and gas pipeline operators, it can be difficult for the company to handle all of the smaller operators that are located throughout all of the regions in the country Italy. These operators often prefer to partner up with companies that actually understand their local standards as well the culture. But these smaller companies often do the work cheaper as well, and have a better market position in that region.

Data security and privacy

In the IT world, there is a requirement for data security, hosting data for operators of the NIMA server, and belonging data security should comply with ISO 27000 1 (Singh, 2023). But there are a lot of regulations being created nowadays, therefore it could be a threat for the company ROSEN. As the company should constantly pay attention to upcoming regulations which could take a lot of time.

Spain

Opportunities

If successful, very promising collaborations, e.g. with Enagás

Enagás having such a powerful position in the gas pipeline industry not only has negative implications for ROSEN. If ROSEN is able to strike a deal with Enagás, they will have the opportunity to implement NIMA in a very sizable system. This not only would be a very good deal for them but also be very good for NIMAs reputation and work portfolio.

Spain is a leading country in hydrogen research so getting in the market now could lead to future opportunities for NIMA and ROSEN

Since Spain is slowly positioning itself as Europe's future leader in green hydrogen, more companies with assets in need of asset integrity management are sure to emerge, meaning more potential customers for ROSEN now, and in the future (Symons, 2023).

Easier entrance to the Portuguese market if that is wanted, Spain and Portugal are connected by pipelines and both get their gas from the Maghreb–Europe Gas Pipeline

Finally, entering the Spanish market creates opportunity for future expansion to Portugal, who are heavily connected to Spain in regards to the oil and gas industry (Wilson, 2022). The reason why Portugal presents such a big opportunity is that Portugal has quite a powerful position right now when it comes to the oil and gas market since the country has no connection to Russian oil and gas. Portugal was, together with Spain, among one of the first European countries to build natural gas processing terminals for boats ("Portugal Is Now Often Called 'Energy Island'. Here's Why," 2022). Additionally, with the construction of the H2Med pipeline connecting Spain and Portugal with the rest of Europe, which grants them an even more important position in the oil and gas market. Such a position also leads to multiple companies who could pose as potentially customers for the NIMA software.

Threats

Highly controlled market, both by Enagas and laws and legislations which could make it hard to set foot

ROSEN chance on entering the gas pipeline part of the industry is heavily dependent on a collaboration with Enagás. While there are different parts of the market that NIMA could apply to, having a relatively big pipeline system regulated by one company is a risk for ROSEN.

Spanish people could prefer a Spanish company

Spain, in comparison to other European countries, is rather nationalist with nationalism being on the rise due to Catalonia's ongoing demand for independence (Coenders et al., 2020; Encarnación, 2023). This means Spanish companies might prefer to work with other Spanish companies, even if the product they offer is comparable. Additionally, conversations with ROSEN mentioned that while expanding to Aberdeen, there were some troubles at first to really set foot in the market because of how close-knit it is. This is likely going to be similar in a nationalist country like Spain, but being aware of that means ROSEN can adjust their approaches to such a market as described later in the marketing strategy.

Quick changing market

Since Spain is researching heavily into new technologies regarding the pipeline system such as green hydrogen, keeping up with those new developments is essential in the Spanish market (Symons, 2023).

6.6 Local standards & regulations

Through researching the local standards and regulations within Italy and Spain, an broad knowledge of the framework can be created. Understanding the specific requirements as well as the standards within Italy and Spain is crucial for implementing and adapting the asset integrity management system. By conducting this research, the software can be aligned with the local standards, country specific guidelines and protocols. This does not only ensure compliance with the regulations, but it also offers operators and clients the chance to see how ROSEN is committing to following the industry standards.

Italy

Whilst there was talked about certain ISO certifications in terms of inspection in the pestle analysis of Italy, in this subchapter there will be talked about the different most important audits as well as the most important regulations that come with managing a integrity management system.

ISO 55000: 2014

This ISO certifications looks at the asset management side of ROSEN. It is an international standard that provides guidelines and looks for the best practices that are applicable in terms of asset management. It also focuses on the effectiveness of assets throughout its life cycle (d'actifs, 2014). As the ISO certification is looking at identifying, assessing and managing risks associated with assets, NIMA could use it to incorporate risk management practices. Next to this the certification looks at the importance of stakeholders in the asset management process. Therefore the platform could facilitate collaboration or communication between stakeholders. As this is a difficult problem nowadays, and in this way it will be possible to communicate everything through the platform.

ISO 2700: 1

ISO 2700:1 provides a framework for establishing, implementing, maintaining and improving the information security management system of a company. It is an international standard for information security management systems (ISMS). The ISO certification is based upon two stages. In the first stage the auditor will look at what the nonconformities are, meaning something that is missing or does not meet the 27001 ISO standard. The second stage is then to watch the NIMA platform in action. In here the auditor will evaluate the ISMS, as well as looking at the different practices, activities and if it is functioning effectively (Semones, N.D.).

Legislative decree No, 105/2015

Legislative decree No, 105/2015 is a legislation in Italy that implements the European Union Directive of 2013/30/EU. The decree looks at the safety of offshore oil and gas operations in Italian waters including fixed or floating platforms and subsea installations. Next to this, the decree also looks protecting the marine environment, and prevent accidents that could result in pollution or harm to the health of human beings (regulation, 2015).

SOC type 1

SOC, also called system and organization control type 1, is a certification which is provided by independent auditors. These independent auditors are in place to validate that an organization has implemented several controls as well as safety concerns in terms of its systems and processes (Dunkelberger, 2023). Doing this SOC, can be beneficial for ROSEN in several ways. Firstly, it could help ROSEN to demonstrate its compliance with applicable regulations as well as the industry standards. Next to this, it could enhance the trust and credibility of ROSEN, as achieving the SOC type 1 certification demonstrates the commitment of the company towards implementing controls and safety measures for NIMA.

SOC type 2

Whilst SOC type 1 focuses on the design and implementation of certain controls, SOC type 2 looks at the effectiveness, as well as the operating efficiency of those controls over a certain time frame. It also describes the tests that are performed in the audit as well as the results that came out of the test (Dunkelberger, 2023). By receiving these results, it is beneficial for ROSEN as the company can gain a competitive advantage by looking at the weak points that came out of the test. As well as identifying potential risks and vulnerabilities in the processes and systems of NIMA.

Spain

ROSEN is already certified in accordance with the ISO 9001:2015 for quality management systems, the ISO 14001:2015 for environmental management systems and the ISO 45001:2018 for occupational health and safety ("ROSEN - Quality & HSE," n.d.). For that reason, those will not be mentioned further in this section.

ISO 55000

The ISO 55000 standard is a globally recognized framework that sets out guidelines and requirements for organizations to establish effective asset management practices. It consists of three interrelated components: ISO 55001, ISO 55002, and ISO 55000 itself, which provides the overarching principles and concepts. ISO 55001 specifies the requirements for implementing an asset management system, while ISO 55002 offers additional guidance on interpreting and applying ISO 55001 in specific contexts. This standard aims to help organizations optimize the value of their assets, minimize risks, and align asset management practices with their strategic objectives. It provides a systematic approach to managing assets throughout their life cycle ("ISO 55000:2014," 2014).

This, as all other ISO standards, is not specific to Spain. However, it can still be helpful in the Spanish market by granting ROSEN additional credibility and possibly an advantage over other companies in the market.

ISO 2700

ISO/IEC 27001 is a widely recognized standard for information security management systems (ISMS). It outlines the requirements for establishing, implementing, and improving an effective ISMS to manage risks related to data security. By conforming to this standard, organizations demonstrate their commitment to following best practices and safeguarding information against cyber threats ("ISO/IEC 27001 Standard – Information Security Management Systems," n.d.).

Again, as an ISO standard this is not specific to Spain but still able to provide ROSEN with a valuable certification in the Spanish market.

Spanish Civil Code (Código Civil)

The Spanish Civil Code establishes the general legal framework for contracts and obligations (Ministerio de Justicia, 2013). This is relatively basic but very essential information to keep in mind when setting up contracts etc. with Spanish customers so ROSEN needs to make sure their legal team is also familiar with the Spanish civil Code.

Spanish Commercial Code

The Spanish Commercial Code provides regulations regarding commercial activities, including business contracts, company formation, corporate governance, and commercial transactions. If a particular commercial activity is not specifically addressed in the Code, it falls under the jurisdiction of the general Civil Law ("Commercial Code in Spain," n.d.).

Again, this is expected but important to keep in mind for ROSEN.

Data Protection Laws

Compliance with data protection regulations is crucial when managing asset integrity data. In Spain, the General Data Protection Regulation (GDPR) and the Organic Law on Data Protection and Guarantee of Digital Rights (LOPDGDD) govern the collection, storage, and processing of personal and sensitive data ("Spain - Data Protection Overview," 2022).

6.7 Marketing practices

An assessment of ROSEN's current marketing practices allow a understanding of what the strengths and weaknesses are in terms of the marketing efforts within the company, hereby taking effective measures such as optimizing the marketing channels or communicating the value of the system. Additionally, researching future marketing practices will allow ROSEN to stay ahead of the competition as well as keeping up to date with emerging trends and create corresponding strategies.

Italy/Spain

Current marketing practices

Client demonstrations

Currently , ROSEN's current approach of marketing is doing client demonstrations in terms of the NIMA platform for operators and its customers. This could be considered as a more reactive way, instead of a pro active way of doing marketing. Instead of actively approaching potential clients, and showcasing their platform's capabilities, they are waiting for clients to request demonstrations. Which in the end could limit the reach of ROSEN as well as the potential market penetration. But when clients request demonstrations, ROSEN often receives pre notions and specific questions which the operator wants to address. Therefore there is a limited control of messaging (Singh, 2023).

Conferences

Whilst this way of doing marketing is already a bit more pro active then reactive, it can still be enhanced. By attending conferences that could be organized by others, ROSEN is dependent on the visibility and opportunities that are provided by those events. It is also a lack of targeted audience engagement, this is because attending industry conferences puts ROSEN in a position where they are explaining its platform to a broad audience. Which may or may not be specifically interested in their platform. This will ultimately lead to missed opportunities (Singh, 2023).

Possible future marketing practices in Italy

Regionally

Regional marketing practices could be implemented by ROSEN in the country Italy. This is done in order to reach the smaller operators that are located throughout Italy as well. A local sales and support team can be created in the Italian region, which are Italian themselves. Therefore it will ensure effective communication, understanding of local markets and quick responsiveness to customer inquiries. Also, having a local presence demonstrates a high commitment to the region, hereby facilitating the relationship between potential clients. Regional marketing practices are implemented in the Asia pacific region as well by ROSEN, and show to be successful (Singh, 2023).

Targeted marketing campaign

The country Italy is very language dependent. This is because only 13% of the Italian people actually can speak English (Whyte, 2022). Therefore a global marketing campaign would not work in this country. Instead, ROSEN could implement a targeted marketing campaign for the country Italy. Hereby workshops can be given in Italy in the Italian language as well as showing the operators what the benefits of the NIMA platform are. These workshops and benefits are already shown in the country Germany, where ROSEN is already implementing this marketing strategy (Singh, 2023).

Possible future marketing practices in Spain

ROSEN mentioned to us that in the context of NIMA, they want to reach the Spanish market more pro-actively.

The first step for ROSEN is to build more awareness and visibility. The foremost action regarding this should be Search engine optimization since, as noticed during research for this paper, the website rarely pops up when googling relevant terms. Awareness and visibility can also be improved by using in person marketing at networking events and fairs with a focus on the Spanish market. The reason that this is recommended is that their experience when expanding to Aberdeen was that the industry was quite close knit and prefers to work with local people. In Spain this will likely be similar since family and personal connections are highly valued in the country. This is why ROSEN should also pay attention to who they send to introduce the company to potential customers which would be preferably people who have worked in the Spanish market before.

An additional approach is publishing advertisements on relevant platforms, like trade magazines (digital or physical). It would be advised for them to specifically tailor them to the Spanish market, similar to how they currently run a Germany specific marketing campaign.

Finally, ROSEN should publish articles and blog posts on their website about their projects and industry relevant topics to get more potential customers to visit their website. These should also include ones specifically to the countries they operate in, so when first entering the Spanish market they should publish posts that talk about topics especially relevant to them.

After that, the company needs to bring the costumer closer to conversion. For ROSEN, this means inquiring about the different plans and pricing options for NIMA. To aid potential customers in this step as best as possible, ROSEN should make sure that they can provide all the necessary information and documents in English and Spanish, depending on what the potential customers wishes. On top of that, when meeting in person, having at least one Spanish speaking person can help with potential translation questions and in building trust.

After that, the most important step is the conversion of a potential customer to a paying one. Other than again offering a Spanish version of all necessary documents, this step should not differ much from other countries.

The last step should be creating a long term relationship with first time buyers. How to do that in Spain specifically is firstly by offer experts to contact who have a background in the Spanish market. The next step to that is offering optional updates about legal and other changes that relate to the data they have in NIMA specific to the Spanish market. This keeps ROSEN in the mind of the customer and strengthens the customer's brand loyalty. Additionally, it is important that ROSEN continually measures, assesses, and re-evaluates their marketing strategies to make sure they are still performing as intended.

6.8 Conclusion

In conclusion, introducing an asset integrity management software within Italy and Spain requires a very broad approach that looks at various aspects. Conducting a PESTLE analysis allows for a broad understanding of the political, social, technological, legal and environmental factors that shape the current market of the two countries. Whilst researching potential partners or clients within the industry enables ROSEN to establish strong relationships, understanding the specific needs of partners of clients and being more effective in entering the market. Furthermore, identifying opportunities and threats allows ROSEN to adapt strategies, look at upcoming trends as well as reducing the risk when entering the market. Understanding the legal structure and looking at the local standards/regulations, ROSEN can ensure regulatory compliance as well as ensuring trust from the partners and clients. Lastly, researching current marketing practices and considering future marketing practices allow ROSEN to create new strategies, as well as a successful adoption of the asset integrity management software.

6.9 Recommendations

Recent investments/regulations

Consider to use recent investments such as the Trans-Adriatic pipeline, by positioning NIMA as a valuable tool for improving the countries infrastructure in terms of safety, sustainability and efficiency. As well as complying with Legislative No.164/2000, No.152/2006 and ISO 9001:2015 and ISO 14001:2015.

Partnerships

Next to this, it will be interesting to create partnerships and clients in the country. Therefore interesting partners and clients for ROSEN to partner up with regarding the platform NIMA are the following:

- Oil and gas companies such as Eni and Enel
- Pipeline operators such as Snam and Saras Energia
- Research institutions such as Politecnico di Milano and Università degli Studi di Pavia
- Technology and data analytic companies like Accenture and Capgemini

- Governmental agencies such as the Ministry of economic development/Autorità per l'energia elettrica
- Environmental organisations like Legambiente and Kyoto club

Enhance the SaaS model

Furthermore, ROSEN can leverage its SaaS revenue model, as it is not used that much in Europe. Hereby possibly changing the packages that are within it, to better suit smaller operators. Secondly, provide localized support and language options, given the importance of language and culture.

Implementation of partnership model

Fourthly, a partnership program model can be made for the NIMA platform. This links operators with the asset integrity management company, in this case ROSEN. This would be an opportunity for ROSEN, as it would make communication between operators and ROSEN easier and more streamlined.

Having the right resources

Bringing in people that has constant engagement with operators is highly recommended as well. Hereby the opportunity is that ROSEN hires people that have a technical background in operating an asset integrity management software, which therefore can advice, push and sell it to the operators. Hereby ROSEN pushes the NIMA platform as a solution rather than a software model.

SOC type 1/2

Pursuing SOC type 1 and SOC type 2 certifications can provide ROSEN with multiple benefits, including compliance with regulations, competitive advantages, enhanced customer assurance, improved risk management and alignment with industry standards.

Implementing new marketing practices

As last, there will be looked at the future marketing practices. Regional marketing practices could be implemented by ROSEN in the country Italy. This is done in order to reach the smaller operators that are located throughout Italy as well. As well as ensuring effective communication, understanding of local markets and having a local presence in Italy. Furthermore a targeted marketing campaign can be made which shows operators what the benefits of the NIMA platform are.

Entering the Spanish market

The Spanish market is a very favourable one to enter. ROSEN is recommended to do so for multiple reasons. Firstly, due to Spain's research in new technologies like green hydrogen, the market is growing and will very likely show sustainable growth further in the future. Additionally, since Spain's most relevant regulations and standards are based on EU legislation or world-wide standards like ISO, ROSEN as an already EU-based company should have no hard time adjusting to those. Finally, expanding to Spain can path the way for a promising expansion to Portugal later on.

Establish partnerships in Spain

Establishing partnerships with companies already in the Spanish market can make it easier for ROSEN to enter. The most important partnerships for ROSEN are:

- Enagás
- Universities
- Environmental NGOs like ECODES

Marketing specifically to the Spanish market

It is important to make sure the Spanish market is reached in the most promising way, mostly meaning all relevant documents are provided in Spanish, there are Spanish speaking engineers that can help the companies set up NIMA or with future questions and content is released that is relevant to the Spanish Market

7 Conclusion

In conclusion, chapter 3 focused on the hydrogen market in Italy and Spain. A focus was placed on the political, economic, social, technological, legal, and environmental factors in both countries. This chapter also highlighted the potential threats and opportunities in the markets. These insights can be valuable for ROSEN to navigate the evolving landscape of the hydrogen market.

Chapter 4 focused on the Italian and Spanish offshore markets. Both markets have overlapping similarities and differences. However, the Italian market is more favorable thanks to the change in political party, positive economic climate, established technological environment, and present regulations which prevent grey zones. On the other hand the Spanish market is unfavorable due to the political climate, possible negative political pressure, and a dependence on tourism.

Chapter 5 looked at the Italian and Spanish markets for the NIMA platform. The introduction of a asset integrity management software within Italy and Spain requires a very broad approach that looks at various aspects.

Lastly, chapter 3,4, and 5 include recommendations. Although these recommendations may not be perfect they can be utilized as a springboard for further and or more detailed planning within the company.

8 Implementation and Consequences

This section will be used to look at the different ways of implementation of the recommendations that are within the report. As well as the consequences that these implementations could have on ROSEN. These consequences are made upon the view that the implementation will be done successfully, and that the conclusions as well as the recommendations are realistic.

8.1 Understanding the Market

Implementation

The implementation of this recommendations requires ROSEN to segment the markets of Italy and Spain based upon the identified factors. Hereby addressing the characteristics of each segment.

Consequences

Enhanced market penetration, as tailoring the services to align with the specific needs of Spain and Italy, ROSEN can increase its market penetrations, and expand its customer base in these regions.

8.2 Differentiate the Offering

Implementation

ROSEN can form strategic partnerships with companies that complement its services. Secondly, ROSEN can invest in developing cutting-edge technology that will set them apart from the competition.

Consequences

This will create a increased market share, as highlighting differentiators in marketing materials can attract new customers, and help ROSEN increase its market share. As well as gaining a competitive edge.

8.3 Leverage Digital Marketing

Implementation

ROSEN can optimize its website and online content to improve its visibility in search engine results. As well as develop and share valuable and informative information regarding hydrogen services.

Consequences

This will increase the visibility of ROSEN and its hydrogen services, as well as expanding its reach beyond the existing customer base. By constantly creating and sharing high-quality content which showcases their expertise, ROSEN can establish itself as a through leader as well.

8.4 Build strong relationships with suppliers

Implementation

ROSEN should actively engage with suppliers to discuss the specific needs, expectations and ROSEN's long term goals. Next to this, ROSEN can consider implementing supplier development programs to enhance the performance of its suppliers.

Consequences

Building strong relationships with suppliers gives ROSEN a competitive edge in the industry. Hereby also creating better negotiation terms, as well as having a reliable supply chain.

8.5 Focus on customer loyalty

Implementation

ROSEN can establish a loyalty program that rewards customers for their continued business and loyalty. Next to this, ROSEN should prioritize delivering quality customer service at every touchpoint.

Consequences

By focusing on building strong relationships, ROSEN can gain customer loyalty and improve customer retention. As well as creating long term collaborations, as building strong relationships results in increased customer lifetime value.

8.6 Stay ahead of industry trends and regulatory changes

Implementation

ROSEN should invest in ongoing market research to stay informed about emerging trends, technological advancements and regulatory changes in the hydrogen industry. As well as fostering a culture of continuous learning and development along its employees.

Consequences

ROSEN can make informed decisions and implement necessary changes in a timely manner. This adaptability will help ROSEN to capitalize on emerging opportunities.

8.7 Use data-driven marketing

Implementation

ROSEN should integrate and analyse the collected data using advanced analytics techniques. This involves employing tools and technologies such as data mining, machine learning and predictive modelling to uncover patterns. Hereby gaining actionable insights from the collected data.

Consequences

By understanding customer behaviour and market trends through data analytics, ROSEN can enhance the effectiveness of its marketing efforts.

8.8 Partnerships and collaborations

Implementation

ROSEN and its partners should establish a collaboration framework and structure to guide their efforts. Including defining the roles, responsibilities, decision making processes and communication channels. As well as involving resource sharing and integration to improve both strengths and weaknesses.

Consequences

Forming strategic partnerships or collaborations allows ROSEN to tap into new markets or customer segments that could have been inaccessible previously. Hereby increasing its market reach and increase brand visibility.

8.9 Italy being favourable in regards to Off-shore services

Implementation

ROSEN should leverage its quality reputation and proven track record in the Italian market to build credibility and trust. Such as highlighting successful past project and emphasizing on ROSEN's expertise and commitment in delivering high-quality services. As well as considering to partner up with companies like ENI, with whom they have worked before. Next to this, ROSEN can utilize a mix of contractors and in-house employees to establish a presence in the Italian market.

Consequences

By leveraging its quality reputation, ROSEN can successfully penetrate the growing offshore gas market in Italy. Next to this, collaborating with ENI will allow ROSEN to enter the market with a trusted partner, leveraging ENI's reputation and network. And as last, utilizing a mix of contractors and in-house employees will help ROSEN to achieve flexibility and scalability in its operations.

8.10 Spain being unfavourable in regards to Offshore services

Implementation

Whilst being unfavourable, ROSEN can still focus on offshore asset and integrity management within Spain. By leveraging a relationship with REPSOL UK, ROSEN can utilize its presence within the Spanish market. By leveraging reputation and track record with REPSOL UK, ROSEN can gradually build positive relationships in the country. Next to this, ROSEN should aim for a small initial footprint in Spain, and gradually growing its presence through successful projects.

Consequences

By focusing on the niche segment of offshore asset and integrity management, ROSEN can differentiate itself from competitors in the Spanish market. This allows ROSEN to offer unique expertise and tailored solutions, hereby positioning itself as a preferred provider in the sector. Next to this, leveraging a relationship with REPSOL UK will allow ROSEN to create new projects and opportunities.

8.11 Recent investments / regulations

Implementation

ROSEN could analyse the new projects such as the Trans-Adriatic pipeline system, hereby develop features and functionalities in NIMA that directly address safety, sustainability and efficiency concerns. In terms of legislative and ISO standards, ROSEN should ensure that NIMA complies with the relevant legislative requirements.

Consequences

Compliance with legislative requirements and looking at ISO standards will enhance ROSEN's credibility and reputation. As a result, ROSEN will become an attractive partner for asset projects that require compliance with specific regulations.

8.12 Partnerships/clients

Implementation

By contacting these different partners and clients, ROSEN can gain a better insight of the Italian and Spanish market before entering it.

Consequences

Creating partnerships with established companies and institutions in the countries will expand ROSEN's presence and market reach. Hereby ROSEN can tap into new customer segments, and gain access to a broader client base.

8.13 Enhance the SaaS model

Implementation

Based on an analysis of the operators, ROSEN can modify its SaaS packages to offer more affordable and flexible options that cater specifically to the requirements of these operators. Furthermore, ROSEN can establish local support teams or leverage partnerships with local service providers

Consequences

By offering tailored SaaS packages for smaller operators, ROSEN can differentiate itself from competitors in the market. Furthermore, by providing tailored packages, ROSEN can tap into the untapped market of smaller operators.

8.14 Implementation of partnership model

Implementation

ROSEN can develop a partnership model that is specifically tailored for the NIMA platform. This program would outline the terms, benefits as well as the communication channels that all of the different stakeholders can use.

Consequences

Creating a partnership model will enhance collaboration between operators and ROSEN. By establishing communication channels, both parties can easily share information, discuss important topics and collaborate on asset integrity management.

8.15 Having the right resources

Implementation

ROSEN can develop a talent acquisition strategy focused on hiring individuals with technical background in operating asset integrity management software but have sales experience as well. Hereby the engagement with operators will be effective.

Consequences

By having personnel with technical experience in asset integrity management, it will enable ROSEN to engage with operators more effectively.

8.16 SOC type 1&2

Implementation

ROSEN can start by conducting an assessment, or possibly a gap analysis of its current security and practices. Hereby evaluating the existing systems of ROSEN against the requirements of SOC type 1 and 2.

Consequences

Achieving SOC type 1 and 2 will demonstrate ROSEN's commitment towards the industry regulations and standards.

8.17 Implementing new marketing practices

Implementation

ROSEN can establish specific marketing strategies that are tailored to the Italian and Spanish market. This involves understanding the unique characteristics of the region and customizing marketing messages. As well as establishing a local presence in these two countries. Which will significantly improve ROSEN's credibility. As last, ROSEN could create a targeted marketing campaign that highlights the specific benefits and value proposition of the NIMA platform such as success stories, all in the nation's languages.

Consequences

These practices will enable ROSEN to gain a deeper understanding of the two markets. By being present and engaged at a local level, the company can adapt its strategies, accordingly, hereby gaining a competitive edge. Next to this, it will also strengthen relationships, as the company is showing commitment to the market and provide local support.

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