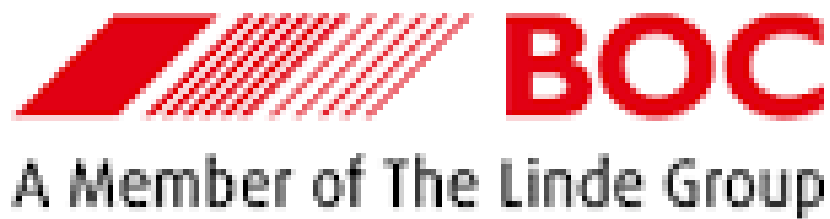




Strategic Management LCMB7003

A strategic analysis of



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Introduction

Why do some firms perform better than others or succeed while others fail? This is a question that is related to strategic management (SM) in organisations. The successful companies use their resources and capabilities more efficiently and apply strategies that have a major impact on their performance relative to rivals (Hill & Jones, 2012). Strategic management is about formulating, implementing, and evaluating a wide range of cross-functional decisions that enable the organisation to achieve its objectives (David, 2011). It concerns 'strategic fit' between the company and its environment to achieve competitive advantage (Campbell, et al., 2002). A company has a sustained competitive advantage when its strategies enable it to perform better than rivals in the market and maintain above the average profitability for years (Hill & Jones, 2012). British Oxygen Company (BOC) has been one of the successful companies with more than 120 years of experience in producing industrial gases. This report is a strategic analysis of BOC to explore how this successful company dealt with different organisational and operational issues to sustain a competitive advantage over rivals. To have a better understanding of the business environment (both the internal and external) and critically analyse the strategic position and direction of BOC, this report applies different theoretical models and frameworks in a strategic management context. It evaluates how BOC has achieved and sustained its competitive advantage in the industrial gas industry over years and how effectively used its resources and capabilities to achieve organisational objectives.

British Oxygen Company (BOC) Background

BOC also known as British Oxygen company, was originally set up in 1886, by Leon and Arthur Brin as Brin's Oxygen Company. In 1906, the entity became known as British Oxygen Company, and in 1969 the name was shortened to BOC. This change was more of a management strategy due to the international type of business and an increasing number of clients. BOC is producing industrial gases like oxygen, nitrogen and argon for over 120 years. Today their products various and include thousands of different gases and mixtures, and related equipment and services. The company delivers 7,000 of its various products per day in the UK and Ireland. It has 3,200 employees, 340 local cylinder agents and 72 retail stores, and seven major units of air separation in these countries. It has more than 350,000 cylinder delivery points and different air separation units as well as medical and industrial cylinder filling sites across these countries (Appendix A). Internationally BOC is a member of Linde Group as it joined the Linde group in September 2006. The merger was finalised in 2007 and introduced

one of the biggest providers of industrial gases and services in the world. Linde has a similar history with BOC being established in Germany in 1879. Nowadays, the Linde Group is one of the major worldwide providers of industrial gases and services globally and employs around 50,500 people in over 100 countries worldwide (BOC, 2020a; BOC, 2020b).

BOC's Success Factors

Critical success factors (CSFs) are different from industry to industry as companies provide different goods and services. CSFs are those particular product features valued by the organisation's customers, and they are critical requirements for the organisation in order to outperform competition (Johnson, et al., 2008). In the case of the industrial gases industry, CSFs are the company's financial resources, R&D capability, plants and pipeline networks, specific patents and trademarks, sustainability, product range, and building trust. For example, BOC's cylinder delivery points, retail stores, and local cylinder agents are important features as they are particularly important to the company's customers. Also, safety, continuous improvement, and environmental performance are important features for customers in this industry. To meet customers' needs, BOC tries to manage safety, health environment and quality (SHEQ) through excellence in all of their products and services and a wide range of key activities such as well designed, operated and maintained equipment and plant or quality products and services supported by the appropriate support and right information (BOC, 2020c).

External Analysis

Managers need to use different external analysis tools to gain an appropriate view of the macro environment and a good understanding of how key trends like rapid technological and competitive environment changes or industry growth affect their businesses and how the opportunities and threats should be effectively addressed (Appa Rao, et al., 2011). Strategic management suggests a practical external analysis tool, the PESTEL analysis, that will be applied in the following section for a better understanding of the BOC external business environment.

PESTEL Analysis

The PESTEL analysis is a strategic analysis tool, explores six key external factors, which can positively or negatively influence the operation of an organisation (Lynch, 2015). A brief analysis of these six key external factors is outlined in the following.

Political Factors

According to Lynch (2015), the strategy involves analytical processes and predicting or understanding the general economic and political situation are critical for all strategic planning. The developing countries governments have plans to spend and invest in plants and base industries and will allocate grants to businesses. This situation depends from country to country; however, this opens new opportunities for large industrial companies such as BOC. For example, the UK government supports manufacturing production in different ways, such as providing financial and advisory service to them (GOV, 2014). Also, some industries have high regulations and laws applied to the function. Industrial gases industry is one of them, and therefore sometimes standard practice proves quite difficult as the company has to adhere to all these law and regulations. More developed the country more binding the policies. For example, the UK government announced an industry strategy to promote purposeful long-term collaboration across industry and government as well as to sustain the growth of the UK industry's supply chain both domestically and internationally (GOV, 2013).

Economic Factors

According to Hill and Jones (2012), the growth rate of the economy, price inflation, interest rates and currency exchange rates are four most important economic factors, which can influence the operation of all organisations. Currency changes on a daily basis automatically impact the company's asset values, revenues, and profits. This can be an important factor for BOC, as British pound (GBP) value has reduced since the Brexit referendum in 2016 (Appendix B). Growth in a country GDP means that the economy is improving. For example, developing countries like India and China, who are large manufacturing centres, show high potential for multinational firms. Industries like healthcare, food beverages, manufacturing have high demands if their consumers have the buying capacity. The highest buying capacity the highest will be the demands for products in these industries. Also, COVID-19 is playing an important economic role recently. According to Sampson (2020), the demand for industrial gases has dropped since the middle of 2019, but Covid-19 crisis added more impacts, and shipments of almost all industrial gases, with the exception of argon and speciality gases, fell with 15% to 20%. From April 2020, shipments of oxygen and nitrogen from the main gas producers dropped further across the world due to global Covid-19 pandemic.

Sociocultural Factors

The sociocultural factors relate to migration, demography, culture, religion, income and ideological views on an issue. Companies in the industrial gas industry are innovation and science-based businesses which depend on highly motivated and highly qualified individuals to maintain the position in the industry (BOC, 2020h). Due to the currency fluctuation and the global COVID-19 pandemic, the business operation and the activities get affected and therefore, with the performance of the economic factor, it will affect the business at BOC. The business will support economic growth and the gross domestic product of the company. On the other hand, with the inflation in the country, the chances for the negative impact on the business. Also, changes in lifestyles could significantly influence the industry future. For example, there is an accent on increasing importance of social media and online platforms. A company could improve its image through the transformation of some non-essentials full-time jobs to working from home jobs based on the popularity of online platforms between people. According to UN (2017), the world is witnessing growing and ageing population. The estimation of the world population is an increase of one billion people by 2030, leading to older population worldwide. Therefore in the future, there will be more demand for energy worldwide.

Technological Factors

In this industry, new technologies with less environmental impact, to produce gases are continuously researched by the players and introduced in their systems. COVID-19 pandemic forced companies to use more technologies for their businesses, and many of them decided to change the way they operate by updating their online platforms, apps and hubs. Many industrial gases manufacturers embraced IoT (Internet of Things) technologies to connect smart devices and equipment to obtain real-time information and detect the gap in their manufacturing processes. The data gathered is analysed, processed and interpreted by senior managers and plant managers in order to achieve and improve the production stages. Many of the big players in the industry, like Linde and Air Products, adopted this technology (Thebusinessresearchcompany, 2019). The company has several apps and an Asia Pacific Digitalization Hub in partnership with Singapore Economic Development Board (EDB). This will help the whole group to expand their digital capabilities, safety, and process efficiency, servicing ability, better monitoring and will deliver better value to the customers (Swotandpestle, 2020).

Environmental Factors

Governments focus especially in developed economies, is on laws regarding climate protection. These laws usually impose specific plants design and products that will reduce the greenhouse effect and pollution, so the company has to comply with the local laws. European countries have strict environmental laws especially related to waste management, while some developing countries in Africa have more relaxed environmental laws. Nowadays, there is an increasing awareness, and the global focus is on more friendly fuels. Also, there is a high demand for radical changes regarding green strategy and sustainability in all sectors, private and public. The group is using its resources efficiently in order to reduce costs and environmental impact.

Legal Factors

Financial regulation of each country will seriously affect the company engineering divisions. For example, finance availability, cost of capital, prevailing risk rates regulate industrial spending. Labour laws are country-specific and usually are very strict. It is a known fact that specific operations of this industry can be hazardous. Therefore these laws focus on employee safety and include specific working hours, and all these specifications may reduce the efficiency of the operations. Safety regulations are also country-specific and restrictive. The transportation of these gas products is strictly regulated as they are hazardous, or they might have a hazardous reaction. Employee safety regulations also should be followed (Swotandpestle, 2020).

Industry Analysis

Industry analysis is another important task for strategic managers as they need to see how their strategic choices might be affected by different forces within the industry and how the competitive environment might be changed based on these forces over the time (Hill & Jones, 2012). The industrial gases market covers merchant gases, packaged gases, healthcare gases, on-site supplies for large companies and other gases used in electronics. The global industrial gases market is growing steadily, and it was forecast to accelerate, from \$67,766.5m to \$96,716.1m by the end of 2019. Also, the merchant gases have the highest market value, with around 34% of the global industrial gases market value (Marketline, 2015). Figure 1 shows the market segmentation in the global industrial gases market. To have a better understanding of

the industry's situation industry lifecycle and Porter's five forces framework will be applied in the following.

Figure 1: Global Industrial Gases Market Segmentation (\$ Millions)

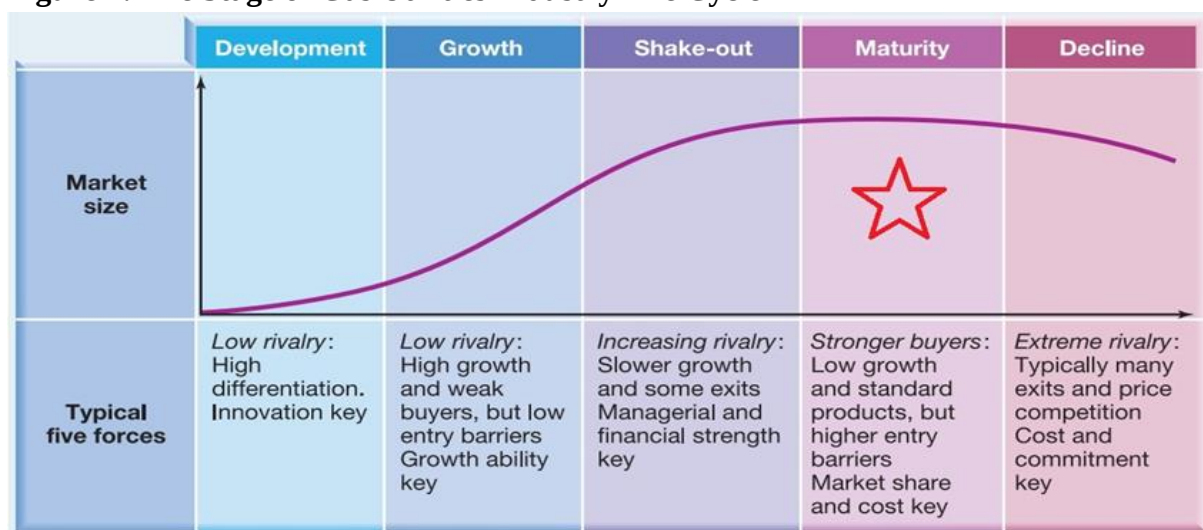
Category	2014	%
Merchant gases (liquefied, tank delivery)	22,949.2	33.9%
Merchant gases (cylinder delivery)	17,110.8	25.2%
High volume gases, on-site gen.	13,316.0	19.6%
Electronics	6,075.1	9.0%
Healthcare	5,722.2	8.4%
Other	2,593.1	3.8%
Total	67,766.4	100%

Source: Marketline (2015)

Industry Life Cycle

The industry life cycle is used in connection with Porter's five forces in order to analyse the industry evolutions effects on the competitive forces. There are five stages in the industry evolution: development, growth, shake-out, mature and decline as outlined in Figure 2. Sometimes the stages of the industry life cycle are not in this format as one stage doesn't necessarily follow the other because different industries associated with varying stages of growth lengths and radical innovation could quickly 'de-mature' (Johnson, et al., 2008). By analysing the global industrial gases market, it can be argued that the industry is located in the maturity stage, where there are high barriers to entry and companies are forced to provide standardised, safe, and environmentally friendly products (Marketline, 2015; BOC, 2020a).

Figure 2: The Stage of Gas Utilities Industry Life Cycle

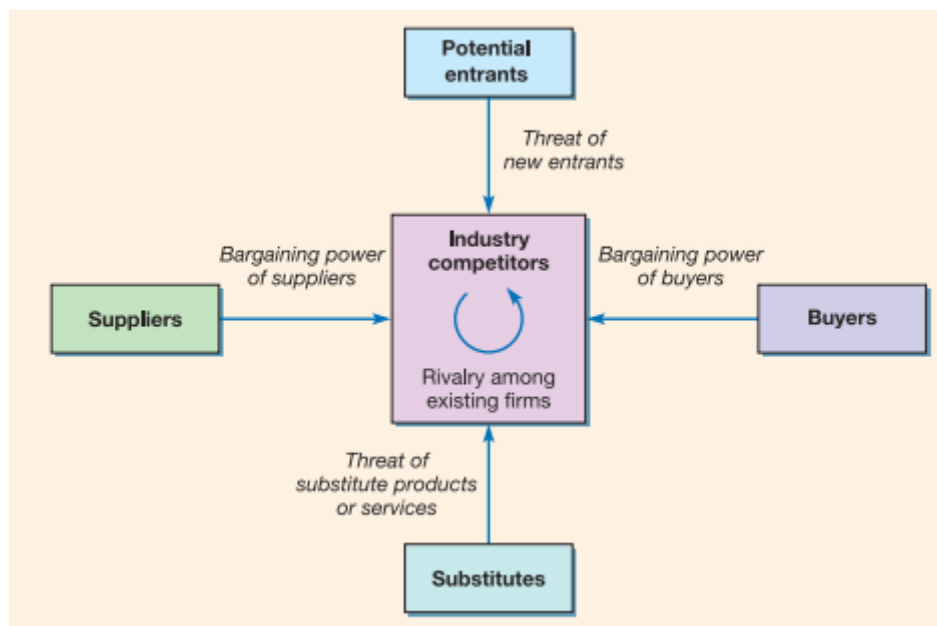


Source: Johnson, et al (2008)

Porter's Five Forces Analysis

Porter's five forces framework is another strategic tool that helps strategic managers to anticipate how powerful are competitive forces within an industry and how they might change the business environment. It indicates opportunities and threats and helps the decision-making process for applying the most effective strategies to deal with industry forces and gain competitive advantage (Hill & Jones, 2008). According to Lynch (2015, p. 88), "the objective of such a study is to use this to develop the competitive advantage of the organisation to enable it to defeat its rival companies". Figure 3 shows the five key external forces that can influence the operation and profitability of all organisations within a specific industry. The results show that the threat of substitute is the lowest force, and competitive rivalry is the highest force within the global industrial gases industry (Appendix C). These forces within the global industrial gases industry will be discussed in more details in the following.

Figure 3: The Five Forces Framework



Source: Lynch (2015)

Threats of New Entrants

The high costs involved to set up production plants, strong R&D capabilities somehow are a significant barrier for new entrants. Also, the strict regulations in place are making this market even more restrictive for any new entrants. There is low brand loyalty combined with the product lack of differentiation, and these factors could drive buyers to switch easily. This situation makes space for new entrants. Suppliers of raw materials are not many so a small

scale entrant could find the access difficult. Taking into consideration the fact this market showed a healthy growth recently and the encouraging growth prognoses make this market appealing for new entrants; therefore, this threat is **moderate** (Marketline, 2015).

Bargaining Power of Suppliers

A number of concentrated suppliers, supplier competitions and high switching cost are three different threats for a supplier power increase (Johnson, et al., 2008). The industrial gas market is quite different from other industries as industrial gases can be manufactured in a few different ways and are basically extracted from the air. For example, the processes are the fractional distillation of the air, chemical synthesis or natural gas processing. As the companies providing the necessary raw materials are not so many, they can get significant power at the price negotiation. However, the containers and pipelines suppliers are quite common meaning that the raw materials suppliers power is lowered. The contracts are usually lengthy, and switching cost may incur to switch to other suppliers; therefore, the supplier power is somewhat boosted. Supplier power is **moderate** within the industrial gases industry (Marketline, 2015).

Bargaining Power of Buyers

Usually, the high buying power of large players is a significant source of pressure for the suppliers (Johnson, et al., 2008). The companies within this industry tend to supply their buyers with large quantities of gases, and the gas products are normally supplied through long contracts where the buyers are able to negotiate the prices due to their financial power. Industrial gases are essentials in many industries for the manufacturing process. This fact weakens the buyers' power. On the other hand, buyer power is increasing because the gas products can only be differentiated by purity and branding, and this is not such an important fact to the buyers. Therefore the bargaining power of buyers is considered **moderate** (Marketline, 2015).

Threats of Substitute Products or Services

This threat can be straight assessed as **weak** meaning that there can be very few substitutes. Generally, industrial gases have a specific composition and even a substitute gas, different in composition, is usually produced by the same companies within the industry (Marketline, 2015).

Industry Rivalry

The industrial gases industry is a highly competitive market with a mix of global, local and regional companies. The places where the companies own the pipelines networks will enable the company to gain a competitive advantage over the other industry players. Figure 3 shows the global competitors that the Linde plc has a leadership position in the market. Therefore, BOC's competitors are other multinational firms such as Air Liquide SA, Messer Group GMBH, Air Products and Chemicals Inc, Taiyo Nippon Sanso Corp (Mitsubishi Chemical Holdings) that make the competition high within the whole industry (Linde, 2019).

Figure 3: Global Industrial Gases Market Competitors

Company	Revenue (US\$m)	Employees	Market Cap (US\$m)	HQ Country
Linde plc	28,228	79,886	131,429	United Kingdom
Air Liquide SA	24,540	66,000	79,434	France
Air Products and Chemicals Inc	8,919	17,440	66,339	United States of America
Taiyo Nippon Sanso Corp	7,670	19,229	7,431	Japan
Airgas Inc				United States of America
Messer Group GmbH				

Source: (Marketline, 2020)

The companies within this industry are usually very large; therefore, the rivalry is very intense. It is very difficult to leave this market to major dispossession of specific and costly assets. Usually, the players are widespread globally; they usually have diversified operations, are less dependent on a single market. For example, Praxair, which recently joined Linde, had operations in 30 countries. Also, Air Liquide has two other business segments except for gases, which are engineering and construction and other activities. Fixed costs are high, labour and energy-intensive but the increased demand from developing economies such as India and China. This situation is easing a bit the rivalry. The industrial gases rivalry is **strong** (Marketline, 2015).

Internal Analysis

Internal analysis is a component of the strategic planning process and concentrates on reviewing the competencies, resources and capabilities of a firm. Its target is to point out the

strengths and weaknesses of the chosen company (Hill & Jones, 2008). In this particular case, a SWOT analysis will be applied together with the resources and capabilities of the company. Also, the company business highlights will be discussed, followed by BOC tax strategy.

Financial Strategy and Business Highlights

In 2006, the biggest deal was announced in the industrial gases industry when the smaller German rival Linde acquired BOC, the second-largest industrial gases group in the world. This takeover created the world's biggest gases group and cost £8.2 bn, ahead of the industry leader France's Air Liquide (Gow, 2006). While in the UK and Ireland, BOC maintains its name locally internationally is known as Linde. Linde Group has a global programme to position all its subsidiaries within the group under a single brand Line named One Linde. For example, BOC India Ltd rebranded in 2013, as Linde India (Linde, 2013). Linde has its headquarters since 2017 in the United Kingdom together with BOC. The Linde Group has a code of business integrity named the "Code". This code also states that the employees should adhere to all local laws governing its business operations and applies to all their subsidiaries. Their tax strategy points out the company's approach to risk management, its governance arrangements in relation to UK taxation, the level of risk it is prepared to accept, attitude to tax planning and cooperation with HMRC (BOC, 2020d). BOC had £770mil turnover for the year ended 31 December 2018, which shows a 3.6% increase in comparison with £743 million for the year ended 31 December 2017. Also ROCE (return on capital employed) increased to 35.6% compared with 31.6% in 2017 (Companieshouse, 2019). Linde had a USD 28228 million for the year ended 31 December 2019 89.9% increase, almost double than USD 14836 million for the year ended 31 December 2018. ROCE was 14.13% compared with 13.33% for 2018 (Marketline, 2020). Appendix C shows the latest five-year accounts figures for the Linde Group.

SWOT Analysis

The SWOT analysis represents a comparison of strengths, opportunities, threats and weaknesses and its purpose is to recognize different strategies in order to exploit counter threats, external opportunities, protect the company strengths and eliminate the weaknesses (Hill & Jones, 2008). As explained above, BOC is a part of the Linde Group, and they retained the name of BOC only in UK and Ireland due to strategic reasons. Internationally they are now named Linde. For BOC as a strategic business unit (SBU), there are not enough market data, so this SWOT analysis was applied to the whole group.

Strengths

Linde's has a massive territorial presence worldwide and owns 350 plants in America, five major pipelines networks and other small facilities. In Europe, it has around 230 plants and in Asia 230 plants. The company also has a diversified customer base worldwide and provides industrial gases like argon, nitrogen, oxygen and other rare gases. It also provides process gases: CO₂, hydrogen, helium, acetylene, electronic gases and speciality gases. The group is also manufacturing, engineering and designing its own equipment. It serves manufacturing, steel making, petroleum refining, healthcare, beverage, aerospace, food, fibre-optics, chemical and water treatment industries. Its leading customer is from the manufacturing industry, with 22% of the sales in 2019. Linde's substantial focus on research and development (R&D) activities has benefited its operations. The R&D department is developing continuously new and improved methods of industrial gases distribution and production. It also focuses on new applications for these gases and the expansion of new markets (Marketline, 2020).

Weaknesses

The operational performance of the company was seriously affected due to increase in its operating costs. The company had a 44.1% fall in 2019 in its operating income (Marketline, 2020). The main business segments are gases and engineering. The company has no other business segment; therefore requires diversification to support the main business (Swotandpestle, 2020).

Opportunities

New contracts would benefit the company. For example, Praxair India Pvt Ltd, a subsidiary of Linde, signed in April 2020 a lengthy new contract with IOCL (Indian Oil Corp. Ltd.). Good opportunities are also arising by creating new plants. For example, in May 2020 the company signed a 20-year contract in Shanghai, China to provide ultra-high purity industrial gases from his two new high-purity nitrogen generators. Also, the group started a syngas processing plant in Louisiana and a new air separation plant Pyeongtaek, South Korea used to provide gases to Samsung Electronics. Also, the company could expand in the US Chemical industry. Although this industry expanded at a slower pace in 2019, due to his rich feedstock and abundant energy has an ample advantage in the global markets. According to estimates, this sector will recover starting 2021 (Marketline, 2020).

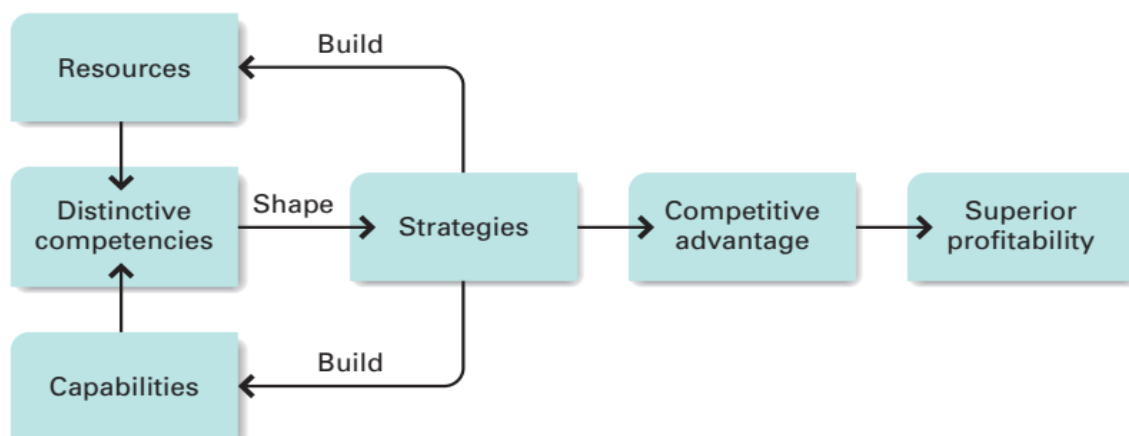
Threats

Internationally the company is competing in a very challenging marketplace. The high rivalry may force the company to reduce its product prices, and this threat may come from small local players with lower product prices. Internationally the main competitors are Air Products, Taiyo Nippon Sanso Corp, Chemicals Inc and Air Liquide SA. At the same time, in the UK BOC has to compete with the subsidiary of Air Products and Air Liquide SA. The most important competitive factors in this industry would be service, technology, quality and price, distribution and capacity. Currency fluctuation could pose a threat to the company financial health. Also, the strict laws and regulations imposed by different governments could negatively impact the business position and operations as non-compliance with these could lead to sanction and penalties and even cancellation of some marketing rights. These policies include environmental protection, energy efficiency, import or export restrictions, data protection, anti-bribery, safety, international tax, currency control, securities laws and regulations (Marketline, 2020).

BOC's Strategic Resources and Capabilities

“Competitive advantage is based on distinctive competencies” (Hill & Jones, 2008, p. 77). Distinctive competencies represent specific strengths that permit a firm to differentiate its products from the competition, and/or achieve considerably lower costs. Distinctive competencies emerge from two complementary sources: resources and capabilities (Hill & Jones, 2008). Figure 4 shows the critical role and fundamentals of the resources and capabilities within a company as they define which strategies can be pursued based on the existing situation.

Figure 4: The Relationship of a Company's Strategies: Strategy, Resources, Capabilities, and Competencies



Source: Hill & Jones (2008)

“The resources of an organisation are those assets that deliver value-added in the organisation” (Lynch, 2015, p. 144). There are two types of resources: tangible and intangible. Tangible resources are physical, like plants, equipment, money, and inventory. In the case of BOC, plants and pipeline networks are tangible and very valuable resources. Also, their financial resources are very critical for their product and market development. Intangible resources do not have a physical appearance but add value to the firm. These are usually created by the company and its employees and could be trademarks, brands, and intellectual property. In the case of BOC, vital intangible resources will be the continuously improved technology used in gases production and their patents.

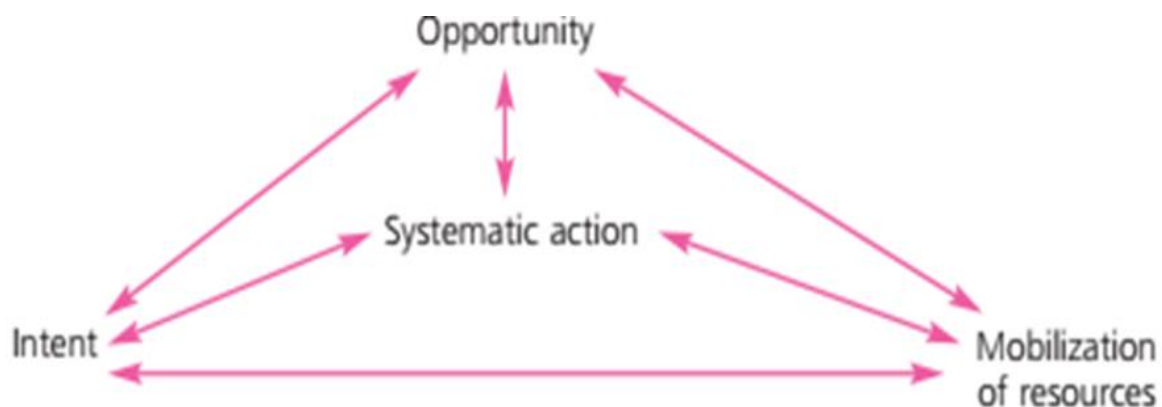
According to Hill & Jones (2008), capabilities are referring to the firm skills and ability in coordinating their resources and use them more efficiently (improving overall productivity). For example, in the case of BOC, its marketing and sales department can develop effective marketing campaigns and sell their products as they have been one of the UK industrial gases market leaders. BOC distribution and logistics including pipeline networks, also provide a competitive advantage to the company through its capability of coordinating, stocking and transporting the gases efficiently worldwide as some gases might need transportation in an area the company doesn't have a pipeline network. The company proves manufacturing capabilities by operating its giant and complex plants and pipelines facilities. These complexes have outstanding quality and safety as they are monitored by different government and other bodies, and very strict rules and regulations bond them. The R&D capability can be considered as one of the key strategic capabilities at BOC. For instance, in 2016, the company spent a total of 121 million euro on R&D activities or projects and established “The Corporate & Support Function Technology & Innovation” in order to accelerate/support their research projects. The company is applying an integrated innovation strategy with a focus on five key areas: efficiency, advanced materials, environment and resources, the overarching topic of digitalization, and quality of life (Swotandpestle, 2020). To obtain a competitive advantage, the company has to implement strategies which build supplementary resources and capabilities and also to find the right strategies that build on the existing ones (Hill & Jones, 2008).

BOC's Strategies to Sustain Competitive Advantage

BOC has different strategic priorities to create and sustain competitive advantages within the industry. The company aims to be the best performing industrial gases, and engineering organisation by delivering innovative and sustainable solutions for their all customers across

the world. They are also trying to protect the environment by using a series of gas generation innovative methods which reduce the environmental impact. They comply with the group and external standards by controlling energy consumption and protecting the climate (Swotandpestle, 2020). The notion of strategy has a very simple definition: a unifying idea which links action with purpose and a process of translating the identified opportunities into successful outcomes (White, 2004). The four elements of the strategy are outlined in figure 5. These strategic priorities such as market development or producing environmentally friendly products, are connected to the companies strategic directions that will be explained in the next section.

Figure 5: Elements of the Strategy



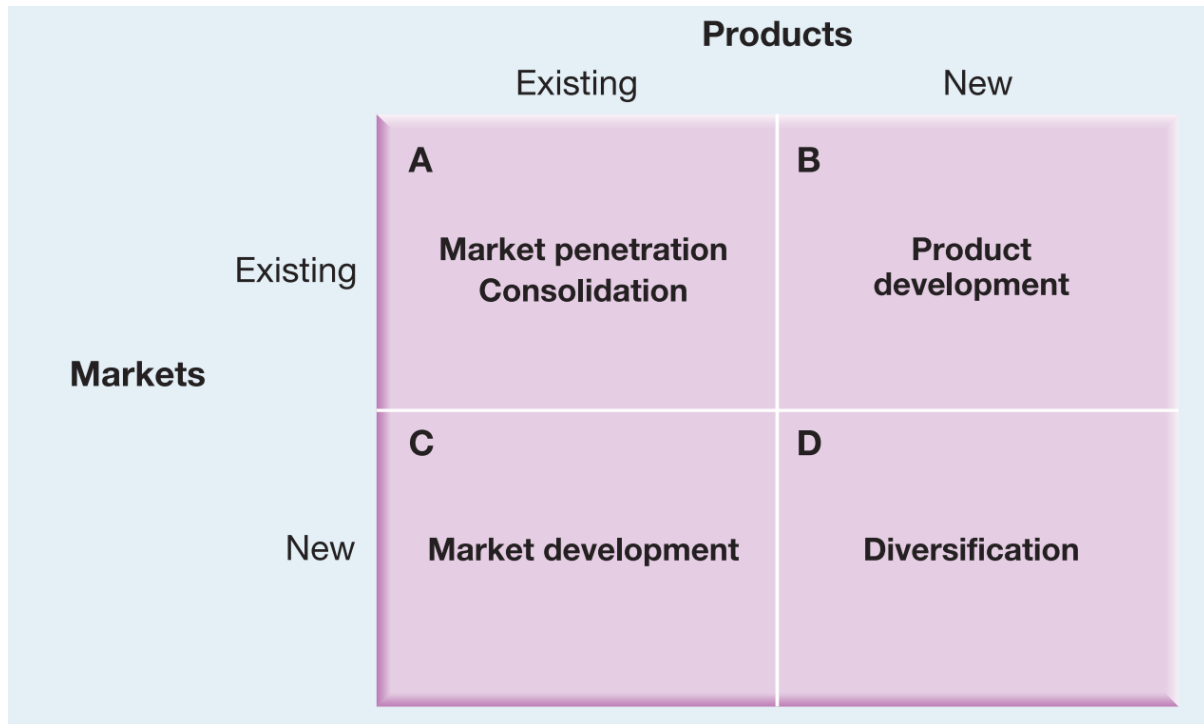
Source: White (2004)

BOC Growth Strategy

According to Ansoff growth matrix, firms have four main choices for growth and strategic development (Johnson, et al., 2008). Firms go for different growth strategies aimed at winning a larger market share, expanding operations, even at the expense of short-term profits (Lynch, 2015). Figure 6 demonstrates these key directions for strategic development. Based on these growth options, BOC is applying different strategies simultaneously. The company tries to increase its footprints in new markets. For example, Linde (2019) announced that their strategic priorities for the whole group are to increase the network density worldwide. Market development means that the organisation strategic direction is to boost its share in new markets (Johnson, et al., 2008). According to applied SWOT analysis, the company is applying market development opportunities by creating new plants in China and the USA as well as signing new contracts with manufacturers (Marketline, 2020). Also, product development is key to the industry. As discussed, companies spend a lot of money on R&D. According to BOC (2020g),

the services and goods that they provide are industrial gases and the engineering services related. The whole group introduced new and innovative ways to produce gases such as carbon dioxide (CO₂) and also have around 360 patents pending.

Figure 6: Firms' Main Strategic Directions - Ansoff Growth Matrix



Source: Johnson et al., (2008)

BOC Strategic Change

Strategic change is a dynamic process that primarily concerned with people, process, and the tasks that they perform in the company (Lynch, 2015). In order to end years of underperformance between 1998 and 2007, BOC was going to a series of changes named shock tactics which lead to the reformulation of BOC strategy. This change was initiated by Danny Rosenkranz, the managing director and consisted from new group structures, performance-based contracts for 19 managers, 5000 redundancies which led to £120 million cost-cutting, reorganization of its whole global business and also hundreds of managers who had to reapply for their jobs. Also, in that period, BOC developed new strategies, by acquiring more companies, creating new areas of products, moving to new markets such as China, and by tightening up its new project management (Lynch, 2015). These strategic changes have been very essential and useful as helped the company to achieve strategic development and competitive advantages.

Green Strategy

Green strategy relates to all organisational activities concerned with sustaining the earth environment and creating the opportunities which arise from these activities. Sustainability is the main principle of green strategy (Lynch, 2015). Managing the highest levels of environmental performance, watch and report actual and/or potential impact on the environment are the responsibility of every BOC employee. Their environmental vision is clear and simple: “We aim to do no harm to the environment”. This strategy can be supported by the fact that two of the main raw materials are air and water. The company also minimises waste in the use of energy, comply with all the law and regulation in place, continuously researching for new technologies and products which improve the environmental performance (BOC, 2020f). Air is the main raw material used by the company. The gases and technologies offered by the group, boost the use of renewable energy and are reducing the consumption of natural resources. Carbon dioxide is the main product of the company. Recycling processes provide cca. 80% of the raw material required and around 10% is coming from processes which are purely organic. CO₂ is a by-product obtained from renewable raw materials fermentations. The use of water is extremely efficient, and the group is ensuring that the emissions to the water are reducing by measuring the phosphates, organic compounds and nitrates. The company also use in all its plant a closed-loop system which helps the use of water for several times, and this way are reducing the waste (Swotandpestle, 2020).

Conclusion and Recommendation

This report was a strategic analysis of BOC to explore how this successful company dealt with different organisational and operational issues to sustain a competitive advantage over rivals. Various frameworks and theories have been applied to have a better understanding of the business environment of the company. The applied PESTEL and SWOT analysis show that economic and environmental factors have significant impacts on BOC's operation. The global industrial gases market is very competitive, and it can be argued that the industry is located in the maturity stage, where there are high barriers to entry and companies are forced to provide standardised, safe, and environmentally friendly products. Overall, the company's performance and position in the market show that BOC applied an appropriate strategy and used its resources and capabilities effectively to achieve its organisational objectives. Based on a critical evaluation of the internal and external business environment and the company's position within

the industry, the following recommendations are proposed for maintaining and sustaining competitive advantages:

- Diversification to other streams of business like power generation (hydropower), as it can be set up from the internal sources of the company, which help to reduce costs. For example, electricity generation will be highly demanded, especially as the automobile industry is evolving towards electric cars.
- Further implementation of the Green strategy could be considered as a key success factor based on the actual trends, sociocultural and environmental situation. Nowadays, environmental issues are becoming an important topic for both consumers and governments.
- To continue to consider the opportunities of the strategic partnerships arising from joint ventures and potential strategic acquisitions.

References

Appa Rao, C., Paravathiswara Rao, B. & Sivaramakrishna, K., 2011. *Strategic Management*. New Delhi: Excel Books Private Limited.

BOC, 2020a. *BOC in the UK and Ireland*. [Online]
Available at: https://www.boconline.co.uk/en/about_the_linde_group/about-boc/boc-in-the-uk-and-ireland/index.html
[Accessed 13 09 2020].

BOC, 2020b. *More than 120 years*. [Online]
Available at: https://www.boconline.co.uk/en/about_the_linde_group/about-boc/boc-history/history
[Accessed 13 09 2020].

BOC, 2020c. *Safety, Health, Environment and Quality (SHEQ)*. [Online]
Available at: https://www.boconline.co.uk/en/about_the_linde_group/about-boc/sheq/index.html
[Accessed 14 09 2020].

BOC, 2020d. *Tax Strategy*. [Online]
Available at: https://www.boconline.co.uk/en/about_the_linde_group/about-boc/tax_strategy/index.html
[Accessed 15 09 2020].

BOC, 2020e. *Boc at a glance*. [Online]
Available at: https://www.boconline.co.uk/en/images/boc_at_a_glance_tcm410-39246.pdf
[Accessed 15 09 2020].

BOC, 2020f. *Environment*. [Online]
Available at: https://www.boconline.co.uk/en/about_the_linde_group/about-boc/sheq/environment-at-boc/environment
[Accessed 15 09 2020].

BOC, 2020g. *About us*. [Online]
Available at: https://www.boconline.co.uk/en/about_the_linde_group/about-boc/index.html
[Accessed 16 09 2020].

BOC, 2020h. *Education*. [Online]
Available at: https://www.boconline.co.uk/en/about_the_linde_group/about-boc/corporate-responsibility/boc-and-education/education
[Accessed 16 09 2020].

Campbell, D., Stonehouse, G. & Houston, B., 2002. *Business Strategy: An Introduction*. 2 ed. Oxford: Butterworth-Heinemann.

Companieshouse, 2019. *Annual reports and financial statements for the year ended 31 December 2018*. [Online]
Available at: <https://beta.companieshouse.gov.uk/company/00337663/filing-history>
[Accessed 13 09 2020].

David, F. R., 2011. *Strategic Management: Concepts and Cases*. 13 ed. New Jersey: Pearson Education.

GOV, 2013. *UK oil and gas industrial strategy: business and government action plan*. [Online]
Available at: <https://www.gov.uk/government/publications/uk-oil-and-gas-industrial-strategy-business-and-government-action-plan>
[Accessed 13 09 2020].

GOV, 2014. *New government support to encourage manufacturing production back to the UK*. [Online]
Available at: <https://www.gov.uk/government/news/new-government-support-to-encourage-manufacturing-production-back-to-the-uk>
[Accessed 13 09 2020].

Gow, D., 2006. *Germany's Linde acquires BOC to create world's biggest gases group*. [Online]
Available at:
<https://www.theguardian.com/business/2006/mar/06/1#:~:text=Germany's%20Linde%20acquires%20BOC%20to%20create%20world's%20biggest%20gases%20group,-%C2%B7%20%C2%A38bn%20deal&text=BOC%2C%20the%20industrial%20gases%20group,agreed%20%C2%A38.2bn%20takeover.&text>
[Accessed 15 09 2020].

Hill, C. W. L. & Jones, G. R., 2008. *Strategic Management Theory: An Integrated Approach*. 8 ed. Boston: Houghton Mifflin Company.

Hill, C. W. L. & Jones, G. R., 2012. *Essentials of Strategic Management*. 3 ed. Mason: South-Western, Cengage Learning.

Inman, P., 2020. *Growing number of Britons working from home, says ONS*. [Online]
Available at: <https://www.theguardian.com/business/2020/jun/18/uk-working-from-home-ons-coronavirus-businesses>
[Accessed 16 09 2020].

Johnson, G., Scholes, K. & Whittington, R., 2008. *Exploring Corporate Strategy*. 8th ed. Harlow: Pearson Education.

Linde, 2013. *BOC India Limited rebrands as Linde India Limited*. [Online]
Available at:
http://www.linde.in/en/news_and_media/local_news/news_130222.html#:~:text=Kolkata%2C%2022%20February%202013%3A%20BOC,Limited%20effective%2018%20February%202013.
[Accessed 16 09 2020].

Linde, 2019. *One Linde Annual Report 2018*. [Online]
Available at: <https://investors.linde.com/-/media/linde/investors/documents/full-year-financial-reports/2018-annual-report-to-shareholders.pdf?la=en&rev=46454aa02ffd45c6b0bec1e291381ded>
[Accessed 13 09 2020].

Lynch, R., 2015. *Strategic Management*. 7th ed. Harlow: Pearson Education.

MacroTrends, 2020. *Pound Dollar Exchange Rate (GBP USD) - Historical Chart*. [Online]
Available at: <https://www.macrotrends.net/2549/pound-dollar-exchange-rate-historical-chart>
[Accessed 14 09 2020].

Marketline, 2015. *Global Industrial Gases*, London: Marketline .

Marketline, 2020. *Linde Plc*, London: Marketline.

Sampson, J., 2020. *Industrial gas shipments hit by Covid-19 accompanied by slumps in shipbuilding and steel*. [Online]

Available at: <https://apac.gasworld.com/story/industrial-gas-shipments-hit-by-covid-19-accompanied-by-slumps-in-shipbuilding-and-steel/>

[Accessed 14 09 2020].

Swotandpestle, 2020. *Linde Group SWOT and Pestle Analysis*. [Online]

Available at: <https://www.swotandpestle.com/linde-group/>

[Accessed 13 09 2020].

Thebusinessresearchcompany, 2019. *Industrial Gas Market*. [Online]

Available at: The group introduced new and innovative ways to produce gases such as carbon dioxide (CO₂). Carbon dioxide is the main product of the company. Recycling processes provide cca. 80% of the raw material required and around 10% is coming from processes which

[Accessed 16 09 2020].

UN, 2017. *World Population Ageing*. [Online]

Available at:

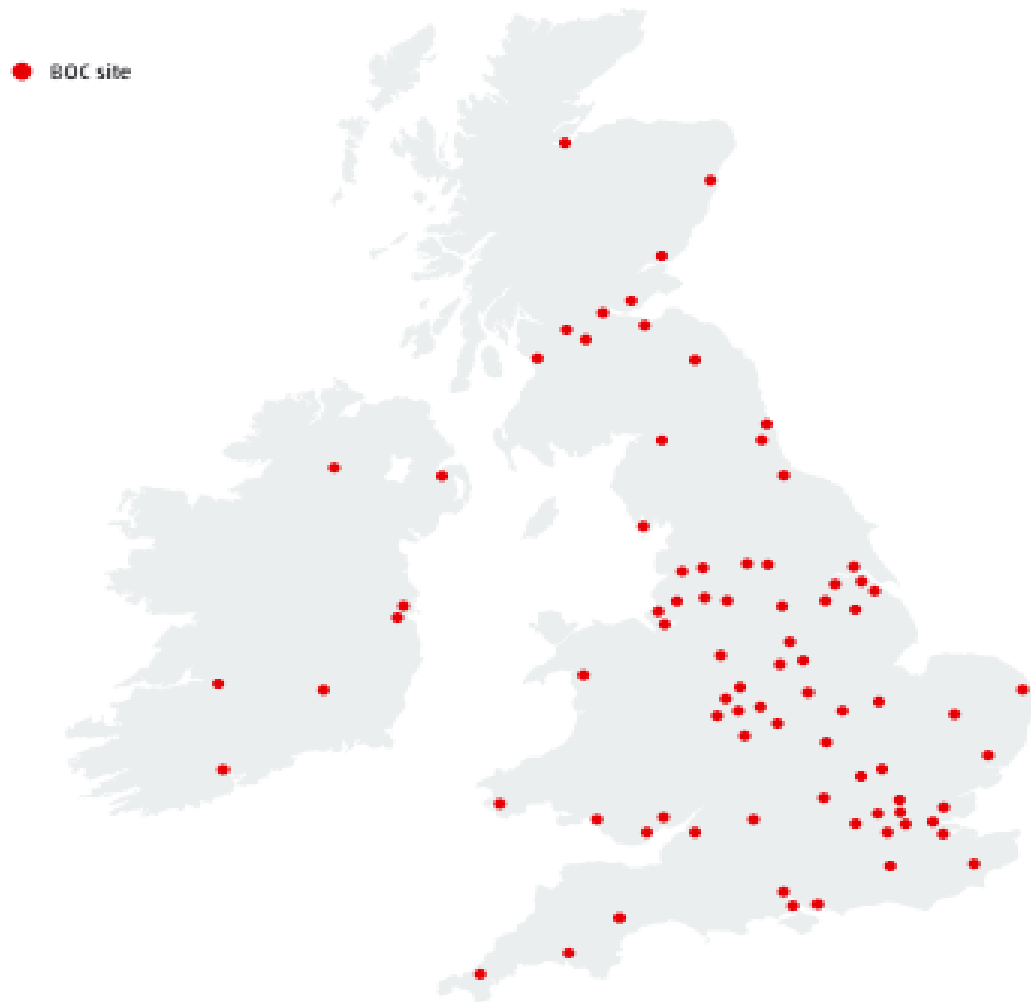
https://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2017_Highlights.pdf

[Accessed 16 09 2020].

White, C., 2004. *Strategic Management*. Basingstoke: Palgrave Macmillan.

Appendices

Appendix A: BOC's Gas and Equipment Distribution Network in the UK and Ireland



Source: BOC (2020e)

Appendix B: Pound Dollar Exchange Rate (GBP USD) - Historical Chart



Source: Macro Trends (2020)

Appendix C: The Five Forces Driving Competition In The Global Industrial Gases Market



Source: Marketline (2015)

Appendix D: Linde plc Financial Statements – Last Five Years

Parameter Name	Currency	2015	2016	2017	2018	2019
Income Statements						
Total Revenue	USD	10776.00	10534.00	11358.00	14836.00	28228.00
Gross Profit	USD	4816.00	4679.00	4976.00	5816.00	11584.00
Operating Income	USD	2321.00	2247.00	2444.00	5247.00	2933.00
Net Income	USD	1547.00	1500.00	1247.00	4381.00	2285.00
Diluted Normalized EPS	USD	05.70	05.42	05.80	05.66	04.80
Balance Sheet						
Total Current Assets	USD	2626.00	2880.00	3285.00	17272.00	10352.00
Total Assets	USD	18319.00	19332.00	20436.00	93386.00	86612.00
Total Current Liabilities	USD	1893.00	2478.00	3307.00	12956.00	12160.00
Total Liabilities	USD	13930.00	14311.00	14418.00	41790.00	37538.00
Total Equity	USD	4389.00	5021.00	6018.00	51596.00	49074.00
Total Common Shares Outstanding	USD	284.88	284.90	286.78	547.24	534.38
Cash Flow						
Cash from Operating Activities	USD	2682.00	2789.00	3041.00	3702.00	6188.00
Cash from Investing Activities	USD	-1303.00	-1770.00	-1314.00	5340.00	1129.00
Cash from Financing Activities	USD	-1297.00	-659.00	-1656.00	-4996.00	-8992.00
Net Change in Cash	USD	21.00	377.00	93.00	3986.00	-1752.00

Source: Marketline (2020)